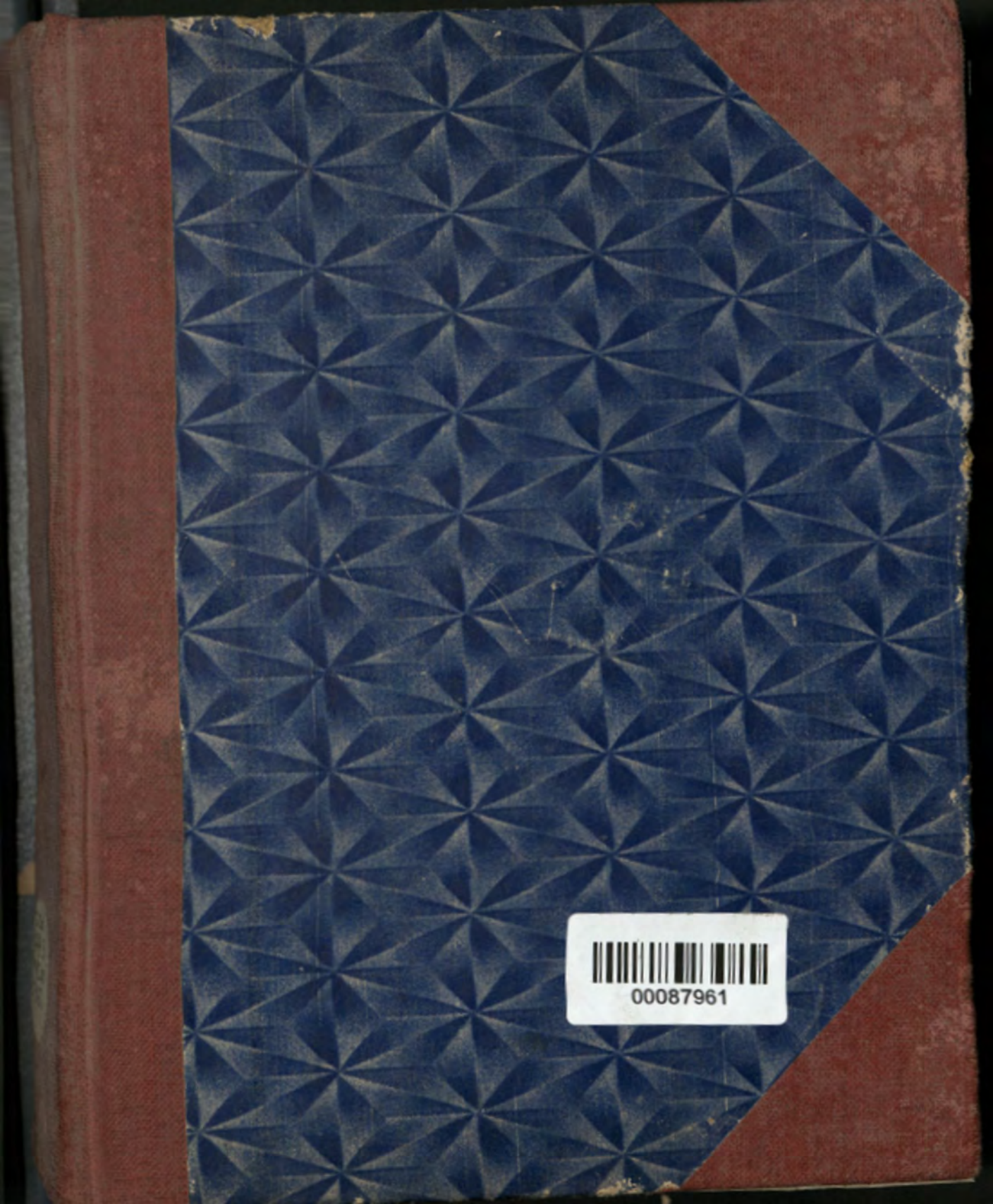

00087961

Digitized with financial assistance from the
Government of Maharashtra
on 12 March, 2016

CONCHOLOGIA ICONICA:

49191

OR,

ILLUSTRATIONS

OF THE

SHELLS OF MOLLUSCOUS ANIMALS.

VOL. II.

CONTAINING MONOGRAPHS OF THE GENERA

CORBULA	GLAUCONOME	MITRA
ARCA	MYODORA	CARDIUM
TRITON	RANELLA	ISOCARDIA

87961
QL

BY

LOVELL AUGUSTUS REEVE, F.L.S., F.Z.S.

AUTHOR OF 'CONCHOLOGIA SYSTEMATICA', 'ELEMENTS OF CONCHOLOGY', &c.

"Be fruitful, multiply, and in the seas
And lakes, and running streams, the waters fill;
Forthwith the sounds and seas, each creek and bay,
With fry innumerable swarm; part single or with mate,
Graze the sea-weed your pasture, and through groves
Of coral stray."—*Milton.*

LONDON:
REEVE, BROTHERS, KING WILLIAM STREET, STRAND.
1843.

OF THE ROYAL BRANCH

God
564.3
LeeCo
87961

MONOGRAPH

OF THE GENUS

CORBULA.

"In what shape they choose,
Dilated or condensed."—*Milton.*

87961

1

2

3

4

5

6

7

8.a

8.b

9

LIBRARY ROYAL ASIATIC SOCIETY

Scarby. del. & lith.

pcl. lith. Linn. imp.

CORBULA.

PLATE I.

Genus CORBULA, Bruguière.

Testa inæquivalvis, inæquilateralis, globosa vel elongato-globosa, plerumque crassa, solida, undique clausa. Cardo dente centrali in utrâque valvâ, foveolâ laterali adjectâ, ligamento inserto; dente in valvâ majore (sinistrâ) conico, ascendente, recurvo, in valvâ minore (dextrâ) cochleariformi subdepresso; dentibus lateralibus nullis. Pallii impressio muscularis sinu parvo.

Shell inequivalve, inequilateral, globose, or elongately globose, generally thick and solid, and everywhere closed. Hinge; a solid central tooth in each valve with a deep pit on one side of it for the reception of the ligament; tooth in the larger or left valve conical, elevated or ascending, and hooked or curved back; in the smaller or right valve, spoon-shaped and somewhat depressed; no lateral teeth. Muscular impression of the mantle exhibits a small sinus.

The Corbulæ, first associated as a genus by Bruguière in the Plates of the Encyclopédie Méthodique, are a small group of acephalous mollusks allied in some degree to the *Myæ*, but whose real affinities do not yet appear to be correctly established. The shells of the Corbulæ are remarkable for their solidity, and peculiarity of growth, the two valves of which they are composed presenting a greater inequality of size and general sculpture than those of any mollusks of the class.

They are for the most part marine, but some few like the *Cerithia* are found in fresh or brackish water. As in that genus the freshwater species have been separated under the title of *Potomis*, so in this they have been distinguished by that of *Potomya*; this modification of habit does not however, in my estimation, constitute a generic difference, and I therefore propose to include both the marine and freshwater species in one and the same genus.

Lamarck appears to have been acquainted with about eight species of *Corbula*; seven new ones, collected by Mr. Cuming along the western coast of South America, were added to the genus by Mr. Sowerby in 1833, and about double that number have been lately described by Mr. Hinds, from the collections made by himself in company with Captain Belcher, and by Mr. Cuming, during his researches amongst the Philippine Islands. One half of the species above enumerated are therefore new to science, and *only three or four* out of the whole number have ever been figured.

Species 1. (Mus. Cuming.)

CORBULA NASUTA. *Corb. testâ elongato-ovatâ, gibbosissimâ, posticè altiore, anticè acuminatâ, rostratâ; valvis leviter multicarinulatis, umbonibus centralibus.*

THE NOSED CORBULA. Shell elongately oval, very gibbous, somewhat elevated posteriorly, acuminated and beaked anteriorly; valves covered with numerous fine small keels, umbones central.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Xipixapi, Gulf of Nicoya (found in sandy mud at the depth of ten fathoms); Cuming.

The chief peculiarity of this shell is the beaked extension of the anterior extremity.

Species 2. (Mus. Belcher.)

CORBULA SULCATA. *Corb. testâ subcordatâ, valdè inæquivalvi, valvâ dextrâ parvulâ, lævi; valvâ sinistrâ profundè sulcatâ, multo complicatâ; umbonibus gibbosis, subcentralibus.*

THE GROOVED CORBULA. Shell somewhat heart-shaped, very inequivalve, right valve small, smooth; left valve deeply grooved, considerably lapping over; umbones gibbous, nearly central.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 138.

Hab. Senegal.

The inequality in the growth of the valves is very striking in this species, the upper valve being entirely smooth, and only about half the size of the left valve, which is very strongly grooved.

Species 3. (Mus. Belcher.)

CORBULA BIRADIATA. *Corb. testâ ovato-oblongâ, posticè rotundatâ, anticè angulato-acuminatâ, longitudinaliter striatâ, striis confertis, elevatis; pallidâ, lateribus umbones versus subangulato-carinulatis, purpurascentibus, radiis binis albis ornatis, areâ intermediâ depressâ, incarnato-tinctâ.*

THE DOUBLE-RAYED CORBULA. Shell ovately oblong, posteriorly rounded, anteriorly angulately acuminated, longitudinally striated, striæ close and numerous; pale, sides slightly angularly keeled towards the umbones, light purple, ornamented with two white rays, the intermediate space being depressed, and tinged with flesh-colour.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Chiriqui and Bay of Caraccas (found in sand and mud at the depth of from three to seven fathoms).

Very prettily rayed at the umbones in the manner just described.

Species 4. (Mus. Cuming.)

CORBULA ERYTHRODON. *Corb. testâ ovatâ, subæquivalvi, latere antico productiore, angulato-carinato; longitudinaliter sulcatâ, pallidâ, margine interno rubro-purpurascente.*

THE RED-TOOTHED CORBULA. Shell ovate, nearly equivalve, anterior side the more produced, and angularly carinated; longitudinally grooved, pale, interior stained round the edge with red or pinkish purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 138.

Hab. Japan; Dr. Siebald.

This species may be recognised by the rich marginal painting of the interior.

Species 5. (Mus. Cuming.)

CORBULA TUNICATA. *Corb. testâ subtrigono-ovatâ, valdè inæquivalvi, posticè rotundatâ, anticè compresso-acuminatâ, umbones versus angulato-carinatâ; valvâ dextrâ prope umbonem sulcatâ, aliter epidermide densâ indutâ; valvâ sinistrâ præcipuè majore, profundè sulcatâ, multo complicatâ.*

THE TUNICATED CORBULA. Shell somewhat triangularly ovate, very inequivalve, rounded posteriorly, compressly acuminated, and angularly keeled towards the umbones, anteriorly; right valve grooved near the umbone, and covered elsewhere with a thick epidermis; left valve much the larger, deeply grooved over its entire surface, and considerably lapping over.

HINDS, Pro. Zool. Soc., 1843.

Hab. Island of Corrigidor, Philippines (found in coarse sand at the depth of seven fathoms); Cuming. Straits of Macassar and Lagulhas Bank, Cape of Good Hope (found on a gravelly bottom at the depth of seventy fathoms); Hinds.

The *Corbula tunicata* differs from the *C. sulçata*, to which it is the next allied species, in the smaller valve being grooved near the umbone.

Species 6. (Mus. Belcher.)

CORBULA SPECIOSA. *Corb. testâ subtrigono-ovatâ, anticè angulato-carinulatâ, subproductâ; valvis valdè inæqualibus, dextrâ obliquè striatâ, striis elevatis, sinistrâ sulcatâ, multo complicatâ, sulcis latis, profundis; albidâ, sanguineo vividè radiatâ; umbonibus com-*

THE HANDSOME CORBULA. Shell somewhat triangularly ovate, angulately keeled and a little produced anteriorly; valves very unequal, right valve obliquely striated, striæ raised; left valve grooved and lapping over, grooves broad and deep; whitish, vividly rayed with bright red; umbones compressed.

HINDS, Pro. Zool. Soc., 1843.

Corbula radiata, Sowerby.

Hab. Gulf of Nicoya (dredged in seven fathoms' water).

This beautiful species was only known to Mr. Sowerby by a single small specinem found by Mr. Cuming on the sands at Acapulco. Mr. Hinds has found it necessary to re-describe the beautiful specimens collected by him in company with Captain Belcher; and under a new title in consequence of the word *radiata* having been already used by Brocchi in reference to a fossil species.

Species 7. (Mus. Cuming.)

CORBULA OVULATA. *Corb. testâ elongato-ovatâ, posticè rotundato, anticè acuminato-rostratâ; pallidâ, exiliter sulcatâ.*

THE OVAL CORBULA. Shell elongately oval, rounded posteriorly, acuminately beaked anteriorly, pale, very finely grooved.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Xipixapi, Bays of Montija and Caraccas, &c. (found in sandy mud at various depths from seven to seventeen fathoms); Cuming.

A few odd valves of this species were found by Mr. Cuming on the sands at Real Llejos and Mazatlan of a clear pink colour, but very much worn.

Species 8. (Fig. *a* and *b*, Mus. Cuming; Fig. *c*, Mus. Belcher.)

CORBULA CRASSA. *Corb. testâ elongato-ovatâ, plus minusve crassâ et gibbosâ, posticè rotundatâ, anticè trigono-acuminatâ; albâ, interdum purpurascente tinctâ, longitudinaliter sulcatâ, liris anticè trigono-complicatis.*

THE THICK CORBULA. Shell elongately oval, more or less thick and gibbous, rounded posteriorly, triangularly acuminated anteriorly; white, sometimes faintly tinged with purple, longitudinally grooved, ridges lying one upon the other down the anterior side of the shell in triangular plaits.

HINDS, Pro. Zool. Soc., 1843.

Hab. Straits of Macassar, Malacca; Hinds. Bais, Island of Negros, Philippines; Cuming (found on a floor of coarse sand and gravel at the depth of from three to seven fathoms).

The growth of this shell is exceedingly irregular, the posterior portion being sometimes larger than the anterior, sometimes smaller; it varies also remarkably in

9

10 a

10 b

11

12 a

12 b

13

14 a

14 b

15

CORBULA.

PLATE II.

Species 9. (Mus. Cuming.)

CORBULA NUCIFORMIS. *Corb. testâ ovatâ, subæquivalvi, crassâ, gibbosissimâ, posticè rotundatâ, anticè angulato-carinulatâ, rostratâ; albida; valvis versus marginem sulcosis; umbonibus centralibus.*

THE NUT-SHAPED CORBULA. Shell ovate, nearly equivalve, thick, very gibbous, rounded posteriorly, angularly keeled and beaked anteriorly; whitish; valves full of small grooves towards the margin; umbones central.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Real Llejos, Central America (dredged from sandy mud at the depth of seven fathoms); Cuming.

The *Corbula nuciformis* approximates very closely to the *Corbula nasuta*; it wants however the anterior prolongation distinctive of that species, and may be easily recognised by its peculiar, rounded, nut-like form.

Species 10. (Fig. *a* and *b*, Mus. Cuming.)

CORBULA NUCLEUS. *Corb. testâ subgloboso-trigonâ, interdum depressiusculâ, valdè inæquivalvi, posticè rotundatâ, anticè obsoletè angulato-carinulatâ; pallidâ, interdum rubido-incarnato tinctâ; valvâ dextrâ lævi, sinistrâ versus marginem subtilissimè sulcatâ.*

THE KERNEL CORBULA. Shell somewhat globosely triangular, sometimes rather depressed, very inequivalve, rounded posteriorly, obsoletely angularly keeled anteriorly; pale, sometimes stained with reddish flesh-colour; right valve smooth, left valve very finely grooved towards the base.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 139; Encyclopédie Méthodique, pl. 230. f. 4.

Tellina gibba, Olivi.

Corbula gibba, Brocchi.

Mya inæquivalvis, Montague.

Hab. Coast of Britain, Mediterranean, &c.

This ancient and well-known species is the only one of the genus that is found upon our shores, and the British specimens (Fig. *b*) are generally larger than those from the Mediterranean (Fig. *a*).

Species 11. (Mus. Cuming.)

CORBULA PALLIDA. *Corb. testâ elongato-ovatâ, tenui, semipellucidâ, posticè rotundatâ, anticè obtuso-angulatâ; valvis longitudinaliter striatis et sulcatis, sulcis in valvâ sinistrâ majoribus, striisque subtilissimis, ab umbonibus profusè divergentibus, minutissimè exsculptis; intus albâ, dentibus roseo tinctis.*

THE PALE CORBULA. Shell elongately ovate, thin, semitransparent, rounded posteriorly, obtusely angulated anteriorly; valves longitudinally striated and grooved, the grooves of the left valve being larger than those of the right, and very minutely sculptured with a number of exceedingly fine striæ diverging from the umbones; interior of the shell white, teeth stained with deep rose.

HINDS, Pro. Zool. Soc., 1843.

Hab. Singapore (dredged from sandy mud at the depth of seven fathoms); Cuming.

Only a single specimen of this very interesting species has been observed at present; it comes nearer perhaps to the *Corbula erythrodon* than any other.

Species 12. (Mus. Cuming.)

CORBULA FASCIATA. *Corb. testâ elongato-rhombiformi, tenui, depressiusculâ, latere antico productiore; valvis ambabus lævibus, aut obsoletè striatis, umbonibus anticè directis; aut rubidâ, aut lutescente-albâ, aut lutescente-albâ rubido divergentè fasciatâ.*

THE BANDED CORBULA. Shell elongately diamond-shaped, thin, rather depressed, anterior side the more produced; both valves smooth or obsoletely striated, umbones directed anteriorly; either reddish, yellowish white or yellowish white divergently banded with red.

HINDS, Pro. Zool. Soc., 1843.

Hab. Philippine Islands; Cuming.

The *Corbula fasciata* differs from the foregoing species in a particular of no inconsiderable importance, namely, in having the umbones curved in the anterior direction, as in the *Myæ, Anatinæ, Panopææ*, &c. I say *anterior*, in accordance with the opinion of Lamarck, but in opposition to that of Mr. Sowerby, because, as the anterior portion of an acephalous mollusk is obviously that part through which it receives nourishment, I think it not unfair to hazard some conjecture that the skin-like appendage, which generally envelopes the produced extre-

mity of a *Corbula*, may serve to protect some alimentary organ analogous to the trunk or proboscis of the animals just alluded to. The umbones of most of the *Corbulæ* therefore, upon this principle, are either *opposed* to each other, or directed *posteriorly*.

Species 13. (Mus. Cuming.)

CORBULA TENUIS. *Corb. testâ elongato-oblongâ, in medio attenuatâ, tenui, longitudinaliter profundè striatâ; latere postico declivi-rotundato, latere antico longiore, acutissimè angulato-carinato, areâ sub umbonibus peculiariter excavatâ.*

THE THIN CORBULA. Shell elongately oblong, attenuated in the middle, very deeply striated from end to end; posterior side bent down and rounded; anterior side longer, very sharply angularly keeled, the area between the keel of each valve being peculiarly hollowed out.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Bay of Montija (dredged from sandy mud at the depth of twelve fathoms); Cuming.

Mr. Cuming unfortunately met with only a single specimen of this curious species.

Species 14. (Fig. *a* & *b*, Mus. Cuming.)

CORBULA MODESTA. *Corb. testâ ovato-rhombiformi, latere antico paululùm productiore, leviter angulato-carinulatâ; longitudinaliter sulcatâ, sulcis subprofundis, liris intermediis scalariformibus; luteo-violaceâ aut purpureâ, radiis albis angustis, ab umbonibus divergentibus, eximiè ornatâ; intùs carneolo-rubrâ.*

THE MODEST CORBULA. Shell ovately diamond-shaped, anterior side a little produced, and slightly angularly keeled; grooved longitudinally, grooves rather deep, the intermediate ridges ranging one upon the other like steps; yellowish violet or purple, delicately ornamented with narrow white rays diverging from the umbones to the margin; interior carnelian-red.

HINDS, Pro. Zool. Soc., 1843.

Hab. Island of Ticao, Philippines (dredged from sandy mud at the depth of eight fathoms); Cuming.

This species approximates somewhat closely to the following; it differs in being more solid, and in not having the anterior area so abruptly angulated; the *Corbula Taheitensis* is also attenuated in the middle, and does not present the same rich carnelian enamel.

Species 15. (Mus. Cuming.)

CORBULA TAHEITENSIS. *Corb. testâ ovato-trapeziformi, in medio paululùm attenuatâ, latere antico abruptè carinato; areâ latâ, ovatâ; longitudinaliter sulcatâ, sulcis profundis, angustis, liris intermediis scalariformibus; lutescente, ab umbonibus pallidè radiatâ; intus lutescente.*

THE TAHEITE CORBULA. Shell ovately trapeziform, a little attenuated in the middle, anterior side abruptly keeled, area between the keels broad and ovate; longitudinally grooved, grooves deep and narrow, the intermediate ridges ranging one upon the other like steps; yellowish, palely rayed from the umbones; interior yellowish.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vii. p. 139.

Hab. Island of Taheite, Pacific Ocean; Lamarck. Delaguete, Island of Zebu, Philippines; Cuming.

I have already spoken of the leading characteristics of this species in treating of the preceding, so far, at least, as I have been enabled to detect them by examination of a single specimen.

16

17a

17b

18

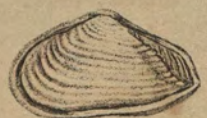
19

20

21

22

23



24

CORBULA.

PLATE III.

(Figures moderately magnified.)

Species 16. (Mus. Belcher.)

CORBULA ALBUGINOSA. *Corb. testâ orbiculari-ovatâ, tenui, epidermide fuscâ indutâ, latere antico subexpanso; valvis regulariter convexis, valdè disparibus; sinistrâ admodum majore, longitudinaliter striatâ, striis elevatis, confertis; dextrâ lævigatâ, lineis perpaucis elevatis irregulariter radiatâ; umbonibus albido-lutescentibus, nitidis.*

THE EYE-SPOTTED CORBULA. Shell orbicularly ovate, thin, covered with a brown epidermis, anterior side somewhat expanded; valves regularly convex, very unequal; left valve very much the larger, longitudinally striated, striæ raised, close-set; right valve smooth, irregularly rayed with a few raised lines; umbones whitish yellow, shining.

HINDS, Pro. Zool. Soc., 1843.

Hab. New Guinea, and Straits of Macassar (found in mud and coarse sand at the depth of from seven to twenty-two fathoms); Hinds.

Not much unlike the *Corbula nucleus*.

Species 17. (Fig. *a* and *b*, Mus. Cuming.)

CORBULA FABA. *Corb. testâ elongato-ovali, subæquilaterali, tenui, lævigatâ, latere antico vix angulato; albidâ, fuscescente-rubro interdum triradiatâ; umbonibus minimis, rectè incurvis.*

THE BEAN CORBULA. Shell elongately oval, nearly equilateral, thin, smooth, anterior side slightly angulated; whitish, sometimes ornamented with three broad rays of brownish red; umbones very small, straightly incurved.

HINDS, Pro. Zool. Soc., 1843.

Hab. St. Miguel, east coast of the island of Luzon, Philippines (obtained in the mud at low water); Hinds.

This species approximates very closely to the *Corbula fasciata*; it is however smaller, and the anterior side is much less angularly produced, the umbones are less prominently developed, and they are not directed anteriorly.

Species 18. (Mus. Forbes.)

CORBULA OVATA. *Corb. testâ tenui, subelongato-ovali, longitudinaliter subtilissimè striatâ, albidâ, epidermide tenui fuscescente indutâ; lateribus rotundatis, antico paululum productiore, subtruncato; umbonibus depressiusculis.*

THE OVATE CORBULA. Shell thin, rather elongately oval, longitudinally very finely striated, whitish, covered with a slight brownish epidermis; sides rounded, anterior side a little more produced, slightly truncated; umbones rather depressed.

FORBES, Malacologia Monensis, p. 53. pl. 2. fig. 8 and 9.

Hab. Ballaugh, Isle of Man (taken from the root of a fucus); Forbes.

Notwithstanding the indefatigable zeal with which Prof. E. Forbes dredged the entire coast of the Isle of Man, the specimen here figured is the only one of the genus he ever met with; and it is extremely interesting, on account of the species never having been previously found either on the coast of Britain or elsewhere.

Species 19. (Mus. Belcher.)

CORBULA FRAGILIS. *Corb. testâ ovato-rhomboideâ, tenui, semipellucidâ, albâ, longitudinaliter striatâ, striis elevatis, numerosis, confertis, lineis exilissimis ab umbonibus radiantibus, decussatis; latere antico angulato-producto; umbonibus depressiusculis, rectè incurvis.*

THE FRAGILE CORBULA. Shell ovately diamond-shaped, thin, semi-transparent, white, longitudinally striated, striæ raised, numerous, close-set, crossed with exceedingly fine lines radiating from the umbones; anterior side angularly produced; umbones rather depressed, straightly incurved.

HINDS, Pro. Zool. Soc., 1843.

Hab. West coast of Veragua, Mexico (found in mud at the depth of eighteen fathoms); Hinds.

The finely decussated sculpture of this shell is very characteristic.

Species 20. (Mus. Cuming.)

CORBULA LÆVIS. *Corb. testâ ovali, æquilaterali, tenui-*

culâ, lævigatâ, albidâ, epidermide lutescente indutâ; latere postico rotundato, antico subangulato; umbonibus depressiusculis.

THE SMOOTH CORBULA. Shell oval, equilateral, rather thin, smooth, whitish, covered with a yellowish epidermis; posterior side rounded, anterior slightly angular; umbones rather depressed.

HINDS, Pro. Zool. Soc., 1843.

Hab. Hong-Kong, China; Hinds.

The valves are curiously flattened or pinched near the ventral margin.

Species 21. (Mus. Catlow.)

CORBULA CATLOWÆ. *Corb. testâ ovatâ, crassâ, depressiusculâ, lævigatâ, albido-rosaceâ aut flavicante, latere postico rotundato, antico subangulato; intus vividè rosaceâ.*

CATLOW'S CORBULA. Shell oval, thick, rather depressed, smooth, whitish rose or yellowish, posterior side rounded, anterior slightly angular; interior vivid rose-colour.

REEVE, Pro. Zool. Soc., 1844.

Hab. Port Nicholson, New Zealand; Swainson.

This shell approximates in some degree to the *Corbula Zelandica* of Quoy, but it is not striated, nor does the anterior side present the Tellina-like flexuosity of that species.

By the above title I wish to honour my kind friend Miss Catlow, the authoress of a highly popular rudimentary work on Conchology, who lately received it from Mr. Swainson of zoological celebrity, now settled at Wellington in New Zealand.

Species 22. (Mus. Cuming.)

CORBULA TRIGONA. *Corb. testâ trigonâ, lævigatâ, lutescente-albâ, interdum fuscescente-rubro uniradiatâ; latere postico rotundato, antico abbreviato, abruptè angulato, quasi abscisso; umbonibus rectis.*

THE TRIANGULAR CORBULA. Shell triangular, smooth, yellowish white, sometimes stained with a single broad ray of brownish red; posterior side rounded, anterior shortened, abruptly angulated, cut short off as it were; umbones straight.

HINDS, Pro. Zool. Soc., 1843.

Hab. Senegal.

An interesting shell, presenting the same peculiarity of structure as the *Corbulæ faba* and *fasciata*, indicative of their living in situations where the water is brackish rather than salt.

Species 23. (Mus. Cuming.)

CORBULA BICARINATA. *Corb. testâ quadrato-ovatâ, solidâ, albidâ, latere postico rotundato, antico abruptè abbreviato, quasi abscisso, bicarinato, carinis ab umbonibus decurrentibus; valvis ambabus longitudinaliter subtilissimè costulatis; umbonibus depressiusculis, posticè incurvis.*

THE DOUBLE-KEELED CORBULA. Shell squarely ovate, solid, whitish, posterior side rounded, anterior abruptly shortened, cut short off as it were, double-keeled, keels running down from the umbones; both valves longitudinally very finely ribbed; umbones rather depressed, incurved posteriorly.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Panama, Real Llejos, Caraccas, St. Elena, &c., West Columbia (found in sandy mud at the depth of from seven to seventeen fathoms); Cuming.

The solid compact form of this shell is very characteristic.

Species 24. (Mus. Cuming.)

CORBULA SCAPHOIDES. *Corb. testâ elongato-ovatâ, tenui, albidâ, subobliquè costatâ, costis regularibus, interstitiis striis minutis longitudinalibus cancellatis; latere postico rotundato, antico elongato-producto, truncato, angulato-carinato, carinis ab umbonibus decurrentibus.*

THE BOAT-SHAPED CORBULA. Shell elongately ovate, thin, whitish, rather obliquely ribbed, ribs regular, interstices cancellated with minute longitudinal striæ; posterior side rounded, anterior elongately produced, truncated, angularly keeled, keels running down from the umbones.

HINDS, Pro. Zool. Soc., 1843.

Hab. Singapore, and Bais, island of Negros, Philippines (found in sandy mud at the depth of seven fathoms); Cuming.

Our magnified representation of this shell has somewhat the appearance of *Corbula crassa*; there is however no danger of confounding the species, if due attention be paid to the above characters.

25

26

27

28.

29

30

31. a.

31 b

32

33

CORBULA.

PLATE IV.

Species 25. (Mus. Cuming.)

CORBULA USTULATA. *Corb. testâ elongato-ovatâ, lævi, valdè inæquivalvi, posticè rotundatâ, anticè subacuminatâ; albidâ, purpurascente- et rufescente-fusco tinctâ, epidermide tenui indutâ; umbonibus eburneis.*

THE SCORCHED CORBULA. Shell elongately ovate, smooth, very inequivalve, rounded posteriorly, somewhat acuminated anteriorly; whitish, stained with purplish and reddish brown, covered with a thin epidermis; umbones ivory white.

REEVE, Pro. Zool. Soc., 1844.

Hab. Singapore.

The colour of this shell is very similar to that of the *Corbula labiata*, but the form of it is much more elongated; the umbones have a more polished appearance.

Species 26. (Mus. Metcalfe.)

CORBULA ROSEA. *Corb. testâ ovatâ, tenui, valdè inæquivalvi, latere postico rotundato, antico angulato-acuminato; longitudinaliter subtilissimè striatâ, striis valvæ sinistralis versus marginem majoribus, elevatioribus; roseo-fuscescente, radiis perpaucis roseis ornatâ.*

THE ROSE CORBULA. Shell ovate, thin, very inequivalve, posterior side rounded, anterior angularly acuminated; longitudinally very finely striated, striæ of the left valve large and more elevated towards the margin; rose-tinted brown, ornamented with a few rose-coloured rays.

Hab. ——?

The striæ of this interesting little species are carved with remarkable clearness, and have quite a satin-like appearance.

Species 27. (Mus. Metcalfe.)

ARCA CONTRACTA. *Arca testâ subelongato-ovatâ, medio paululùm contractâ, latere postico rotundato, antico angulato-truncato; longitudinaliter elevato-striatâ; albidâ, epidermide fuscescente indutâ; umbonibus erosis, subcentralibus.*

THE CONTRACTED CORBULA. Shell rather elongately ovate, a little contracted in the middle, posterior side rounded, anterior angularly truncated; longitudinally carved with raised striæ; whitish, covered with a light brown epidermis; umbones eroded, nearly central.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii. p. 312.

Hab. Georgia and East Florida, United States; Say.

All the specimens I have as yet seen of this American species are much eroded, and it is probably the nature of it to be so.

Species 28. (Mus. Cuming.)

CORBULA LABIATA. *Corb. testâ subtrigono-ovatâ, lævi, planiusculâ, inæquivalvi, lateribus supernè attenuatis, infra angulato-rotundatis; valvâ sinistrali propè umbonem leviter corrugatâ; albidâ, rufescente- aut purpurascente-fusco tinctâ, epidermide fuscâ indutâ.*

THE FULL-LIPPED CORBULA. Shell somewhat triangularly ovate, smooth, rather flat, inequivalve, sides attenuated at the upper part, angulately rounded beneath; left valve slightly wrinkled near the umbone; whitish, stained with reddish or purplish brown, covered with a brown epidermis.

GRAY, MSS. British Museum.

Mya labiata, Maton, Trans. Linn. Soc., p. 326, pl. 24. f. 1 to 3.

Potamomya labiata, Hinds.

Hab. Singapore.

A solid and more triangularly formed shell than the *Corbula ustulata*.

Species 29. (Mus. Cuming.)

CORBULA PROCERA. *Corb. testâ oblongo-ovatâ, lævigatâ, posticè rotundatâ, anticè subelongato-acuminatâ, ab umbonibus angulatâ; rufescente-fuscâ, epidermide corneâ indutâ; umbonibus erosis.*

THE LONG CORBULA. Shell oblong-ovate, smooth, rounded posteriorly, rather elongately acuminated, and angulated from the umbones anteriorly; reddish brown, covered with a horny epidermis; umbones eroded.

HINDS, Pro. Zool. Soc., 1844.

Hab. ——?

This shell, which is apparently an estuary species, may be recognised by its anterior acumination.

Species 30. (Mus. Cuming.)

CORBULA ADUSTA. *Corb. testâ subobliquè trigonâ, lævigatâ, tumidiusculâ, posticè rotundatâ, anticè leviter angulato-acuminatâ; rubido-fuscâ, epidermide cornea indutâ; umbonibus erosis.*

THE BURNT CORBULA. Shell somewhat obliquely triangular, smooth, rather swollen, rounded posteriorly, slightly angulately acuminated anteriorly; reddish brown, covered with a horny epidermis; umbones eroded.

HINDS, Pro. Zool. Soc., 1844.

Hab. New Zealand.

Differs from the preceding species in being rather stouter, and less anteriorly acuminated.

Species 31. (Fig. *a*, Mus. Cuming, Fig. *b*, Mus. Saul.)

CORBULA NIMBOSA. *Corb. testâ trigono-ovatâ, lævigatâ, posticè rotundatâ, anticè subangulato-productâ; albidâ, epidermide pallidè olivaceâ, lineis nigricantibus capillaribus undatis prope umbones radiatim pictâ; umbonibus erosis, subcentralibus.*

THE RAINY CORBULA. Shell triangularly ovate, smooth, rounded posteriorly, rather angularly produced anteriorly; whitish, epidermis pale olive, radiately painted near the umbones with zigzag blackish hair-like lines; umbones eroded, nearly central.

Potamomya nimbosa, Sowerby, Conch. Manual, f. 498 and 499.

Hab. The tributary streams of the Rio de la Plata (found in the mud); Cuming.

This species may be easily distinguished by the delicate zigzag hair-lines which ornament the valves around the umbones.

Species 32. (Mus. Cuming.)

CORBULA OCHREATA. *Corb. testâ elongatâ, latere postico abbreviato, rotundato, antico angulato-acuminato; lævigatâ, umbones versus leviter corrugatâ; albidâ, epidermide corneâ pallidissimè olivaceâ indutâ; umbonibus erosis.*

THE PALE CORBULA. Shell elongated, posterior side abbreviated, rounded, anterior angulately acuminated; smooth, slightly wrinkled towards the umbones; whitish, covered with a very pale olive horny epidermis; umbones eroded.

Potamomya ochreata, Hinds, Pro. Zool. Soc., 1843.

Hab. Brazil (found in fresh-water streams).

There is no indication in this species of the black hair-like lines which so neatly adorn the preceding.

Species 33. (Mus. Cuming.)

CORBULA CUNEATA. *Corb. testâ trigono-ovatâ, solidâ, subæquivalvi, latere postico rotundato, antico angulato; longitudinaliter sulcatâ, liris intermediis prominentibus; albidâ, purpurascente pallidè tinctâ; umbonibus subdepressis, posticè albiradiatis.*

THE WEDGE-SHAPED CORBULA. Shell triangularly ovate, solid, nearly equivalve; posterior side rounded, anterior angulated; longitudinally grooved, intermediate ridges prominent; whitish, palely tinged with purple; umbones rather depressed, rayed with white on the posterior side.

HINDS, Pro. Zool. Soc., 1843.

Hab. Catbalonga, Philippine Islands (found in soft mud at the depth of ten fathoms and upwards), Cuming; and Lagulhas Bank, Cape of Good Hope (at the depth of seventy fathoms); Hinds.

This species partakes of the characters of the *Corbulæ tunicata* and *crassa*.

LIBRARY
OF THE
BOMBAY
BRANCH
OF THE
ROYAL ASIATIC SOCIETY

34

35

36

37

38

39

40

41

42

LIBRARY OF THE ROYAL ASIATIC SOCIETY

43

Sowerby del et lith.

prel. lith. Linn. imp.

CORBULA.

PLATE V.

(Figures considerably magnified.)

Species 34. (Mus. Cuming.)

CORBULA ROTALIS. *Corb. testâ oblongâ, corneâ, posticè rotundatâ, anticè subnasutâ; valvis valdè disparibus, sinistrâ præcipuè majore, rotundatâ, sulcatâ, productâ, acutâ, dextrâ parvâ, lineis elevatis radiatâ; umbonibus valdè inæqualibus, subobliquis, posticis.*

THE WHEEL-LIKE CORBULA. Shell oblong, horny, rounded posteriorly, protruded anteriorly; valves very unequal, left valve very much the larger, rounded, grooved, produced, sharp, right valve small, rayed with elevated lines; umbones very unequal, rather oblique, posterior.

HINDS, Pro. Zool. Soc., 1843.

Hab. Calapan, island of Mindoro, Philippine Islands (found in coarse sand at the depth of about fifteen fathoms); Cuming,

This species has somewhat the form of our common British *Corbula nucleus*.

Species 35. (Mus. Cuming.)

CORBULA MONILIS. *Corb. testâ minutâ, globosâ, pallidâ, striatulatâ, valvis valdè inæqualibus, sinistrâ multò majore, anticè elongatâ, productâ; umbonibus rectis, lævigatis.*

THE NECKLACE-BEAD CORBULA. Shell minute, globose, pale, a little striated, valves very unequal, left valve much the larger, anteriorly elongated, produced; umbones straight, smooth.

HINDS, Pro. Zool. Soc., 1843.

Hab. Sual, island of Luzon, Philippines (found in sandy mud at the depth of from five to seven fathoms).

The smallest species of the genus at present known, and remarkable on account of the manner in which the right valve is sunk in the left.

Species 36. (Mus. Cuming.)

CORBULA POLITA. *Corb. testâ oblongâ, ventricosâ, tenui, albidâ, obsoletè sulcatâ, posticè rotundatâ, anticè ab umbonibus subangulatâ; valvis ferè æqualibus, sinistræ margine ventrali acutâ, subproductâ; umbonibus æqualibus, lævigatis, rectis.*

THE POLISHED CORBULA. Shell oblong, ventricose, thin, whitish, obsoletely grooved, posteriorly rounded, anteriorly rather angular from the umbones; valves almost equal, ventral margin of the left valve sharp, rather produced; umbones equal, smooth, straight.

HINDS, Pro. Zool. Soc., 1843.

Hab. Sorsogon, province of Albay, island of Luzon, Philippines; Cuming,

Not so highly polished as the *Corbulæ eburnea* and *solidula*.

Species 37. (Mus. Cuming.)

CORBULA CARNOSA. *Corb. testâ ovatâ, solidâ, subæquilaterali, posticè rotundatâ, anticè truncato-angulatâ, breviter attenuatâ, pallidâ, carnoso-roseo radiatâ, valvis ambabus subtilissimè sulcatis, marginibus ventralibus inclausis; umbonibus lævigatis, subcentralibus.*

THE FLESHY CORBULA. Shell ovate, solid, nearly equilateral, posteriorly rounded, anteriorly truncately angulated, a little attenuated; pale, rayed with fleshy rose; both valves very finely grooved, ventral margins closed in; umbones smooth, nearly central.

HINDS, Pro. Zool. Soc., 1844.

Hab. ——?

This is an exceedingly pretty species; locality unknown.

Species 38. (Mus Belcher.)

CORBULA OBESA. *Corb. testâ ovatâ, tenui, ventricosâ, pallidâ, striatâ, posticè rotundatâ, anticè ad extremitatem truncatâ, ab umbonibus acutè angulatâ; valvarum marginibus ventralibus inclausis, gibbosis; umbonibus rectis, lævigatis.*

THE STOUT CORBULA. Shell ovate, thin, ventricose, pale, striated, posteriorly rounded, anteriorly truncated at the end, sharply angled from the umbones; ventral margins of the valves closed in, gibbous; umbones straight, smooth.

HINDS, Pro. Zool. Soc., 1843.

Hab. West coast of America (Panama, Veragua, San Blas, &c.), found at the depth of from about twenty to thirty-two fathoms; Hinds.

It is impossible to give an accurate idea by lithographic drawing of the various specific differences between the very small *Corbulæ* figured in this plate.

Species 39. (Mus. Belcher.)

CORBULA MARMORATA. *Corb. testâ parvâ, oblongâ, so-*

lidulâ, lævigatâ, marmoratâ, posticè rotundatâ, anticè subangulatâ; valvarum marginibus ventralibus inclausis; umbonibus obliquis, posticis; ante umbones sanguineo maculatâ.

THE MARBLED CORBULA. Shell small, oblong, solid, smooth, marbled, posteriorly rounded, anteriorly rather angular; ventral margins of the valves closed in; umbones oblique, posterior; spotted with purplish red before the umbones.

HINDS, Pro. Zool. Soc., 1843.

Hab. West coast of Veragua, South America (found in mud at the depth of twenty-six fathoms); Hinds.

Distinguished from the other minute species by the reddish tinge about the umbones.

Species 40. (Mus. Metcalfe.)

CORBULA QUADRATA. *Corb. testâ quadratâ, albidâ, tenui, lævigatâ, ventricosâ, subpellucidâ, posticè rotundato-truncatâ, anticè rotundato-angulatâ, abbreviatâ; umbonibus obliquis, posticis, incurvis.*

THE SQUARE CORBULA. Shell square, white, thin, smooth, ventricose, somewhat transparent; posteriorly rotundately truncated, anteriorly rotundately angulated, abbreviated; umbones oblique, posterior, curved inwards.

HINDS, Pro. Zool. Soc., 1843.

Hab. ——?

This is a very characteristic species, and may be identified from the accompanying figure without difficulty.

Species 41. (Mus. Cuming.)

CORBULA SOLIDULA. *Corb. testâ parvâ, ovatâ, subtrigonâ, solidulâ, elevatiusculâ, subæquilaterali, sulcatâ, posticè rotundatâ, anticè angulatâ; valvarum marginibus ventralibus inclausis; umbonibus rectis, lævigatis.*

THE SOLID CORBULA. Shell small, ovate, somewhat triangular, solid, rather elevated, nearly equilateral, posteriorly rounded, anteriorly angulated; ventral margins of the valves closed in; umbones straight, smooth.

HINDS, Pro. Zool. Soc., 1843.

Hab. Bais, island of Negros, Philippines; Cuming. Straits of Macassar; Hinds.

This and the following species approximate very closely.

Species 42. (Mus. Cuming.)

CORBULA EBURNEA. *Corb. testâ parvâ, ovatâ, subtrigonâ, subæquilaterali, eburneâ, solidulâ, complanatâ, lævigatâ, obsoletè sulcatâ; margine ventrali gibbosâ; umbonibus parvis, subrectis, nitidis.*

THE IVORY CORBULA. Shell small, ovate, somewhat triangular, nearly equilateral, ivory-white, rather solid, flat, smooth, obsoletely grooved; ventral margins gibbous; umbones small, nearly straight, shining.

HINDS, Pro. Zool. Soc., 1843.

Hab. Islands of Camiguing and Bohol, Philippines (found in coarse sand at the depth of seven fathoms); Cuming. North coast of New Guinea (found in mud at the depth of sixty fathoms); Hinds.

"This shell," says Mr. Hinds, "closely approaches the *Corbula solidula*, but is distinguished by its somewhat more triangular shape, polished, ivory-like, flattened valves, and the slightly sulcate sculpture."

Species 43. (Mus. Cuming.)

CORBULA CRISPA. *Corb. testâ ovatâ, solidiusculâ, albidâ, posticè rotundatâ, anticè productâ, extremitate truncatâ, ab umbonibus obtusè carinatâ; valvâ sinistrâ subtiliter sulcatâ, margine valdè producto, dextrâ ferè lævigatâ; umbonibus subcentralibus.*

THE CURLED CORBULA. Shell ovate, rather solid, whitish, posteriorly rounded, anteriorly produced, truncated at the end, obtusely carinated from the umbones; left valve finely grooved, margin considerably produced, right valve almost smooth; umbones nearly central.

HINDS, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines.

The *Corbulæ* described in this Plate are all represented of about twice the natural size.

CORBULA.

[*Temporary Index.*]

	Plate	Species
adusta, *Hinds*	IV.	30
albuginosa, *Hinds*	III.	16
bicarinata, *Sowerby*	III.	23
biradiata, *Sowerby*	I.	3
carnosa, *Hinds*	V.	37
Catlowæ, *Reeve*	III.	21
contracta, *Say*	IV.	27
cuneata, *Hinds*	IV.	33
crassa, *Hinds*	I.	8
crispa, *Hinds*	V.	43
eburnea, *Hinds*	V.	42
erythrodon, *Lamarck*	I.	4
faba, *Hinds*	III.	17
fasciata, *Hinds*	II.	12
fragilis, *Hinds*	III.	19
gibba, Brocchi	II.	10
labiata, *Gray*	IV.	28
lævis, *Hinds*	III.	20
marmorata, *Hinds*	V.	39
modesta, *Hinds*	II.	14
monilis, *Hinds*	V.	35
nasuta, *Sowerby*	I.	1
nimbosa, *Reeve*	IV.	31
nuciformis, *Sowerby*	II.	9
nucleus, *Lamarck*	II.	10
obesa, *Hinds*	V.	38
ochreata, *Reeve*	IV.	32
ovata, *Forbes*	III.	18
ovulata, *Sowerby*	I.	7
pallida, *Hinds*	II.	11
polita, *Hinds*	V.	36
procera, *Hinds*	IV.	29
quadrata, *Hinds*	V.	40
radiata, Sowerby	I.	6
rosea	IV.	26
rotalis, *Hinds*	V.	34
scaphoides, *Hinds*	III.	24
solidula, *Hinds*	V.	41
speciosa, *Hinds*	I.	6
sulcata, *Lamarck*	I.	2
Taheitensis, *Lamarck*	II.	15
tenuis, *Sowerby*	II.	13
trigona, *Hinds*	III.	22
tunicata, *Hinds*	I.	5
ustulata, *Reeve*	IV.	25

MONOGRAPH

OF THE GENUS

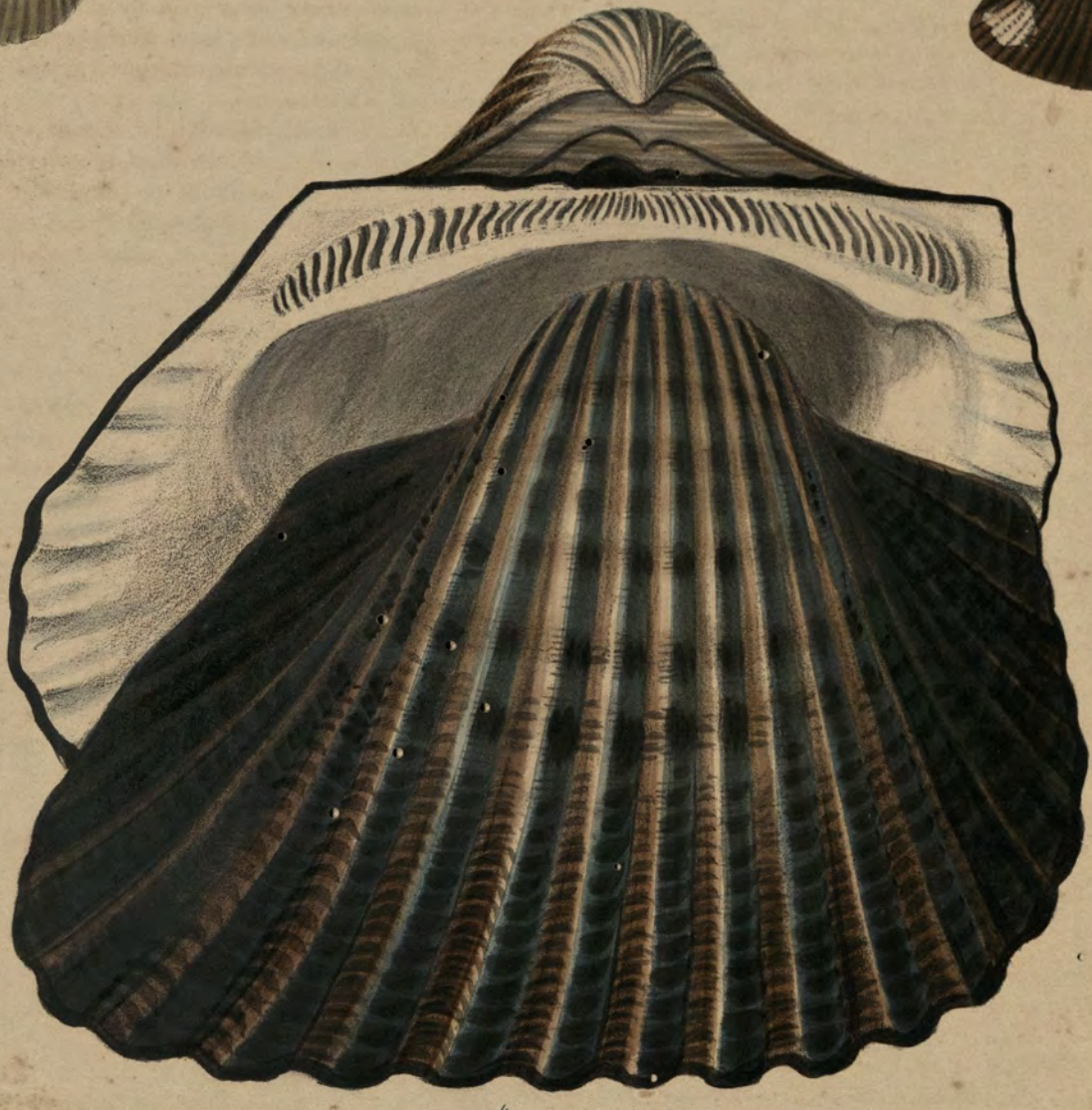
A R C A.

"In order set,
With silent circumspection, unespied."—*Milton.*

1

2

3



4

5

6

7

ARCA.

PLATE I.

Genus ARCA, Linnæus.

Testa vel æquivalvis, vel inæquivalvis, inæquilateralis, ventricosa, nunc radiatim costata, nunc simplex, epidermide vel pilosâ, vel setosâ, indutâ; umbonibus prominentibus, plus minusve distantibus, ligamenti areæ incremento gradatim discedentibus. Cardo linearis, rectus, dentibus minimis, numerosissimis. Ligamentum externum, ad aream inter umbones affixum. Animal sæpè bysso instructum.

Shell equivalve or inequivalve, inequilateral, ventricose, sometimes radiately ribbed, sometimes simple, covered with either a hairy or a bristly epidermis; umbones prominent, more or less distant, receding from each other according to the increase of the ligamentary area. Hinge linear, straight, teeth small and very numerous. Ligament external, attached to the area between the umbones. Animal often furnished with a byssus.

The *Arcæ* present a very distinct and accurately defined assemblage of generic characters, whether as regards the animal, according to the descriptions of Poli and Deshayes, or the shell now under consideration. The cardinal portion of the shell of *Arca* is of very peculiar structure; the umbones are, with rare exception, more or less widely separated from each other, often to a very considerable extent, by the interposition of a large area which sustains the ligament, deposited either over its entire surface, or in superficial lozenge-shaped grooves. The hinge is composed of a long rectilinear series of fine plate-like teeth, varying from between thirty and forty to one hundred and twenty or more in number, in each valve; the teeth of one valve interlock closely with those of the opposite valve, and the hinge or cardinal axis thus constituted runs through the centre of the ligamentary area.

The *Arcæ* are susceptible of being divided into two very distinct groups or sections, and various modifications arise in their growth, composition, and sculpture, from the difference of habit in their animal inhabitants.

The *Arcæ* of the first division live free and unattached, their shells are for the most part solid and ponderous, and all are without exception disposed in strongly developed ribs radiating from the umbones, giving a crenulated margin to the valves, by which they interlock one with the other. Another interesting feature in this group is that the shell is often inequivalve, the margin of the left valve extending beyond that of the right, and generally exhibiting a more elaborate style of sculpture, as if the left mantle of its animal inhabitant were more highly organized than the right.

The *Arcæ* of the second division live attached to stones, &c., by a strong muscular byssus which is exserted though an opening in the margin of each valve; their shells are of much lighter structure and composition, and being seldom distinctly ribbed, the margin of the valves is not crenulated. The protection moreover which the byssus-bearing *Arcæ* gain by their strong power of attachment allows of a much more simple condition of the hinge; the teeth are consequently smaller, and the ligament is weaker.

Few of the *Arcæ* have ever been figured, though seven-and-twenty species were added ten years since by Mr. Sowerby to those already published by Lamarck, Say, and others; these therefore, together with a considerable number of new ones since acquired, constitute a very interesting monograph.

Species 1. (Mus. Cuming.)

ARCA NUX. *Arca testâ obliquè rhomboideâ, turgidâ, inæquivalvi, radiatim costatâ, costis duabus vel tribus et viginti, angustis, nodulosis, valvæ dextralis costis posticis sublævibus; umbonibus prominentibus, distantibus, vix obliquis; albidâ, epidermide fuscâ, corneâ, tenui, ad anticam sulcorum partem setigerâ, indutâ.*

THE NUT ARK. Shell obliquely rhomboid, swollen, inequivalve, radiately ribbed, ribs two or three and twenty in number, narrow, nodulous, posterior ribs of the right valve nearly smooth; umbones prominent, distant, a little oblique; white, covered with a thin, brown, horny epidermis, bristly on the anterior side of the grooves.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Xipixapi, South America (found in sandy mud at the depth of twelve fathoms); Cuming.

A small oblique gibbous species.

Fig. 2. (Mus. Cuming.)

ARCA GRANDIS. *Testa junior.*

For description see Species IV.

Arca quadrilatera, Sowerby (not of Lamarck).

After minutely comparing this shell, the identical specimen described by Sowerby, with several examples of the *Arca grandis*, I am convinced that it is merely the young of that species.

Species 3. (Mus. Cuming.)

ARCA OBESA. *Arca testâ ovatâ, inæquivalvi, tenuiculâ, ventricosâ, latere antico rotundato, postico subangulato, extenso; albâ, epidermide fuscâ, inter costas*

setigerâ, obtectâ; radiatim costatâ, costis angustis numerosis, duabus vel tribus et quadraginta, marginem versus leviter canaliculatis; ligamenti areâ subangustâ.

THE STOUT ARK. Shell ovate, inequivalve, rather thin, ventricose, anterior side rounded, posterior somewhat angular and stretched out; white, covered over with a brown epidermis, which is bristly in the interstices between the ribs; radiately ribbed, ribs narrow, numerous, two or three and forty in number, slightly canaliculated towards the margin; area of the ligament rather narrow.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Atacamas, West Columbia (dredged from the depth of seven fathoms); Cuming.

Chiefly remarkable for its great number of ribs.

Species 4. (Mus. Cuming.)

ARCA GRANDIS. *Arca testâ subæquivalvi, quadratâ, solidâ, lateribus supernè subauriculatis, infra rotundatis, postico vix extenso; radiatim costatâ, costis rotundatis, quatuor vel quinque et viginti, anticis leviter nodulosis; umbonibus rectè incurvis; costis cæruleo-viridibus, interstitiis albidis, epidermide corneâ scabrâ indutis.*

THE GREAT ARK. Shell nearly equivalve, square, solid, sides slightly auriculated at the upper part, rounded beneath, posterior side a little extended; radiately ribbed, ribs rounded, four or five and twenty in number, anterior ribs slightly nodulous; umbones straightly incurved; ribs dark bluish green, interstices whitish, covered with a rough horny epidermis.

BRODERIP and SOWERBY, Zool. Journ., vol. iv.

Hab. Real Llejos, Bay of Guayaquil, &c., western coast of South America; Cuming, Hinds.

A large example of this species has been selected.

Species 5. (Mus. Cuming.)

ARCA REVERSA. *Arca testâ obliquâ, æquivalvi, turgidâ, latere postico rotundato, antico obliquè depresso-truncato; radiatim costatâ, costis ad quadragenas, confertis, planulatis, subtilissimè rugulosis; albâ, epidermide molli nigricante indutâ; umbonibus approximatis; areâ subnullâ.*

THE REVERSED ARK. Shell oblique, equivalve, turgid, posterior side rounded, anterior obliquely depressly truncated; radiately ribbed, ribs about forty in number, close-set, flat, very finely wrinkled; white, covered with a soft blackish epidermis; umbones approximated; ligamentary area very small.

GRAY, Sowerby, Pro. Zool. Soc., 1833.

Hab. Tumbez, Peru (found in soft mud at the depth of seven fathoms); Cuming.

The *Arca reversa* may be distinguished by its peculiar growth, and by the flat, finely wrinkled surface of the ribs.

Species 6. (Mus. Cuming.)

ARCA BREVIFRONS. *Arca testâ oblongâ, inæquivalvi, latere antico brevi, rotundato, postico longiusculo, latiore, supernè angulato; albâ, viridescente tinctâ, epidermide fuscâ, inter costas setigerâ, indutâ; radiatim costatâ, costis duabus vel tribus et viginti, planulatis, versus marginem in medio sulco divisis; umbonibus approximatis; areâ nullâ.*

THE SHORT-FRONTED ARK. Shell oblong, inequivalve, anterior side short, rounded, posterior rather long, wider, angulated at the upper part; white, stained with light green, covered with a brown epidermis, which is bristly between the ribs; radiately ribbed, ribs two or three and twenty in number, flat, divided in the middle towards the margin by a groove; umbones approximated; no ligamentary area.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Tumbez, Peru (dredged from soft mud at the depth of seven fathoms); Cuming.

This shell answers very nearly to Lamarck's *Arca Indica*, which I have not as yet succeeded in identifying.

Species 7. (Mus. Cuming.)

ARCA LABIATA. *Arca testâ subquadrato-globosâ, valdè inæquivalvi, latere antico breviore, rotundato, postico subangulato; albâ, epidermide viridescente-fuscâ, ad anticam sulcorum partem setigerâ, indutâ; radiatim costatâ, costis anticis, valvæ sinistralis præcipuè, subtiliter rugulosis, costis posticis lævibus, latioribus; umbonibus remotis; ligamenti areâ latâ, rhomboideâ.*

THE LIPPED ARK. Shell somewhat squarely globose, very inequivalve, anterior side shorter, rounded, posterior rather angular; white, covered with a brown epidermis, which is bristly on the anterior side of the grooves; radiately ribbed, anterior ribs, of the left valve especially, finely wrinkled, posterior ribs smooth, wider; umbones remote from each other; area of the ligament wide, diamond-shaped.

SOWERBY, Pro. Zool. Soc., 1833.

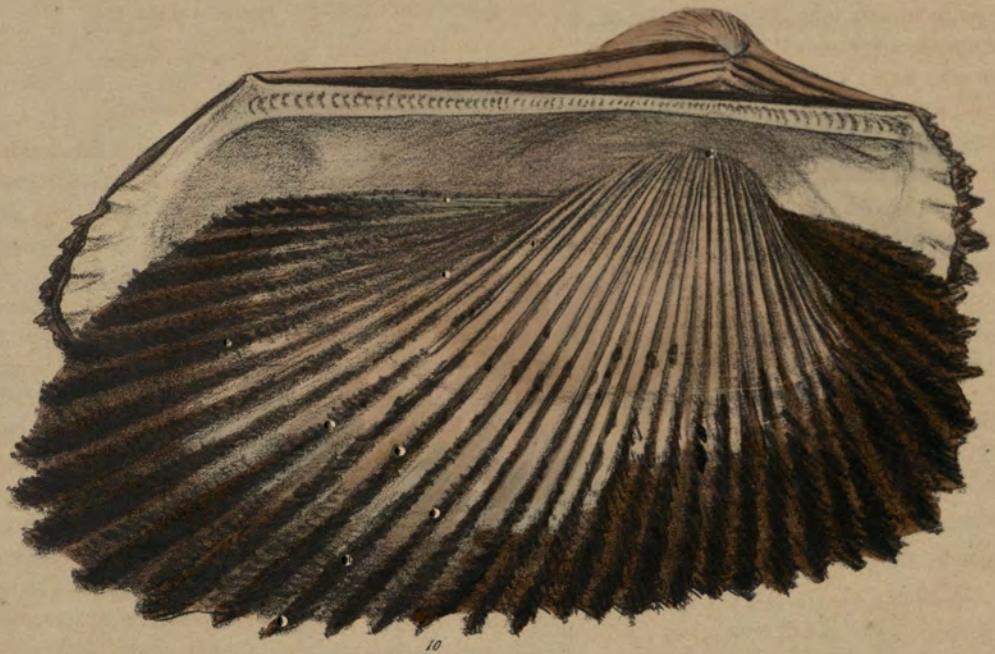
Hab. Real Llejos and Tumbez, Peru (dredged from mud at the depth of seven fathoms); Cuming.

An interesting and well-defined species.

9a

8

9b



10

11

12

13

Sowerby, del. et lith.

Arel. lith. Linn. imp.

ARCA.

PLATE II.

Species 8. (Mus. Cuming.)

ARCA PILULA. *Arca testâ orbiculari, valdè gibbosâ, subinæquivalvi, vix inæquilaterali, lateribus supernè angulatis, infra rotundatis; albidâ, fuscescente pallidè tinctâ, epidermide fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis quinque vel sex et viginti, angustis, valvæ sinistralis omnibus, valvæ dextralis anticis tantum, subtiliter nodulosis; umbonibus subremotis, ligamenti aream elongato-rhomboideâ.*

THE LITTLE BALL ARK. Shell orbicular, very gibbous, slightly inequivalve, nearly inequilateral, sides angulated at the upper part, rounded below; whitish, palely stained with light brown, covered with a brown epidermis, full of bristles between the ribs; radiately ribbed, ribs five or six and twenty in number, narrow; all the ribs of the left valve, anterior ribs only of the right valve, finely nodulous; umbones rather remote, area of the ligament elongately diamond-shape.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

This species is so exceedingly gibbous that the shell is as wide as it is high, and it is the same in all stages and varieties of growth.

Species 9. (Mus. Metcalfe.)

ARCA ANOMALA. *Arca testâ quadrato-ovatâ, subcompressâ, inæquivalvi, latere antico rotundato, postico subangulato-rotundato; albâ, viridescente pallidè tinctâ, epidermide corneâ inter costas sparsim indutâ; radiatim costatâ, costis octo et viginti, valvæ dextralis lævibus, planulatis, sinistralis convexis, nodulosis; ligamenti aream angustâ.*

THE ANOMALOUS ARK. Shell squarely ovate, rather compressed, inequivalve, anterior side rounded, posterior side rather angularly rounded; white, stained with light green, sparingly covered with a horny epidermis between the ribs; radiately ribbed, ribs eight-and-twenty in number; those of the right valve flat and smooth, of the left valve convex and nodulous; area of the ligament narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

It seems rather anomalous that the ribs in one valve of this shell should be convex and nodulous, whilst in the other they are flat and smooth; but it is an interesting fact that the larger valve of the inequivalve species of Arca exhibits a much more elaborate style of sculpture than the smaller. The *Arca pilula* just described shows this remarkable peculiarity very distinctly, but not so prominently as the species under consideration; and it now remains to be determined whether this difference arises from any superiority of organization in the left lobe of the mantle of the animal inhabitant.

Species 10. (Mus. Cuming.)

ARCA FORMOSA. *Arca testâ elongato-ovatâ, æquivalvi, lateribus supernè angulatis, infra rotundatis, latere anticò valdè breviore; albicante, fuscescente pallidè tinctâ, epidermide fuscâ, nitente, inter costas setosissimâ, obtectâ; radiatim costatâ, costis quinque vel sex et triginta, planulatis, posticis latioribus, anticis subtiliter nodulosis, anterioribus sulco divisis; ligamenti aream longissimâ, latiusculâ; cardine angustissimo, dentibus parvis, numerosis.*

THE BEAUTIFUL ARK. Shell elongately ovate, equivalve, sides angulated at the upper part, rounded beneath, anterior side much the shorter; whitish, palely stained with light brown, covered over with a brown shining epidermis, which is very long and bristly between the ribs; radiately ribbed, ribs five or six and thirty in number, flat, posterior wider, anterior finely nodulous, the most anterior divided by a groove; area of the ligament very long and rather broad; hinge very narrow, teeth small and numerous.

SOWERBY, Pro. Zool. Soc., 1833.

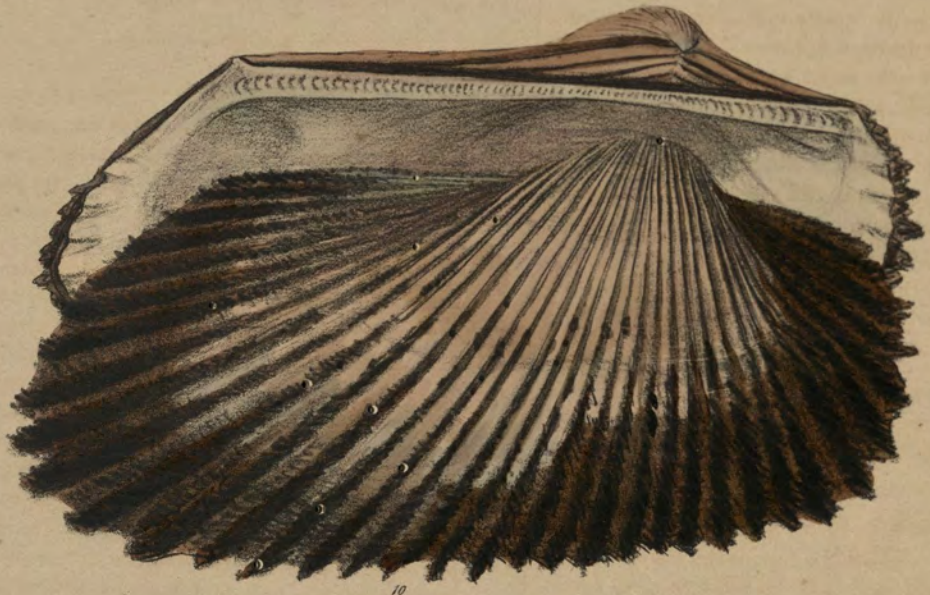
Hab. Gulf of Tehuantepec, Mexico (found in sandy mud at the depth of from ten to twelve fathoms); Cuming.

No one can fail to recognise this beautiful species by the accurate delineation of it which accompanies this description. Mr. Cuming possesses another specimen almost entirely covered with an epidermis, in which the bristles are at least half an inch long at the posterior end of the shell.

8

9a

9b



10

11

12

13

Sowerby. del. et lith.

ARCA.

PLATE II.

Species 8. (Mus. Cuming.)

ARCA PILULA. *Arca testâ orbiculari, valdè gibbosâ, subinæquivalvi, vix inæquilaterali, lateribus supernè angulatis, infra rotundatis; albidâ, fuscescente pallidè tinctâ, epidermide fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis quinque vel sex et viginti, angustis, valvæ sinistralis omnibus, valvæ dextralis anticis tantum, subtiliter nodulosis; umbonibus subremotis, ligamenti aream elongato-rhomboideâ.*

THE LITTLE BALL ARK. Shell orbicular, very gibbous, slightly inequivalve, nearly inequilateral, sides angulated at the upper part, rounded below; whitish, palely stained with light brown, covered with a brown epidermis, full of bristles between the ribs; radiately ribbed, ribs five or six and twenty in number, narrow; all the ribs of the left valve, anterior ribs only of the right valve, finely nodulous; umbones rather remote, area of the ligament elongately diamond-shape.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

This species is so exceedingly gibbous that the shell is as wide as it is high, and it is the same in all stages and varieties of growth.

Species 9. (Mus. Metcalfe.)

ARCA ANOMALA. *Arca testâ quadrato-ovatâ, subcompressâ, inæquivalvi, latere antico rotundato, postico subangulato-rotundato; albâ, viridescente pallidè tinctâ, epidermide corneâ inter costas sparsim indutâ; radiatim costatâ, costis octo et viginti, valvæ dextralis lævibus, planulatis, sinistralis convexis, nodulosis; ligamenti aream angustâ.*

THE ANOMALOUS ARK. Shell squarely ovate, rather compressed, inequivalve, anterior side rounded, posterior side rather angularly rounded; white, stained with light green, sparingly covered with a horny epidermis between the ribs; radiately ribbed, ribs eight-and-twenty in number; those of the right valve flat and smooth, of the left valve convex and nodulous; area of the ligament narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

It seems rather anomalous that the ribs in one valve of this shell should be convex and nodulous, whilst in the other they are flat and smooth; but it is an interesting fact that the larger valve of the inequivalve species of Arca exhibits a much more elaborate style of sculpture than the smaller. The *Arca pilula* just described shows this remarkable peculiarity very distinctly, but not so prominently as the species under consideration; and it now remains to be determined whether this difference arises from any superiority of organization in the left lobe of the mantle of the animal inhabitant.

Species 10. (Mus. Cuming.)

ARCA FORMOSA. *Arca testâ elongato-ovatâ, æquivalvi, lateribus supernè angulatis, infra rotundatis, latere anticò valdè breviore; albicante, fuscescente pallidè tinctâ, epidermide fuscâ, nitente, inter costas setosissimâ, obtectâ; radiatim costatâ, costis quinque vel sex et triginta, planulatis, posticis latioribus, anticis subtiliter nodulosis, anterioribus sulco divisis; ligamenti aream longissimâ, latiusculâ; cardine angustissimo, dentibus parvis, numerosis.*

THE BEAUTIFUL ARK? Shell elongately ovate, equivalve, sides angulated at the upper part, rounded beneath, anterior side much the shorter; whitish, palely stained with light brown, covered over with a brown shining epidermis, which is very long and bristly between the ribs; radiately ribbed, ribs five or six and thirty in number, flat, posterior wider, anterior finely nodulous, the most anterior divided by a groove; area of the ligament very long and rather broad; hinge very narrow, teeth small and numerous.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Gulf of Tehuantepec, Mexico (found in sandy mud at the depth of from ten to twelve fathoms); Cuming.

No one can fail to recognise this beautiful species by the accurate delineation of it which accompanies this description. Mr. Cuming possesses another specimen almost entirely covered with an epidermis, in which the bristles are at least half an inch long at the posterior end of the shell.

Species 11. (Mus. Cuming.)

ARCA HOLOSERICA. *Arca testâ obliquè quadratâ, æquivalvi, lateribus supernè angulatis, antico infra rotundato, postico angulato-extenso; albidâ, epidermide holosericâ obtectâ; radiatim costatâ, costis duabus vel tribus et triginta, creberrimis, planulatis, umbones versus minutissimè pertuso-cancellatis; umbonibus subobliquis; ligamenti areâ latiusculâ.*

THE VELVETY ARK. Shell obliquely quadrate, equivalve, side angulated at the upper part, anterior rounded below, posterior angularly stretched out; whitish, covered with a peculiarly soft, short, velvety epidermis; radiately ribbed, ribs two or three and thirty in number, very close-set, flat, very minutely cancellated in a pricked manner near the umbones; umbones a little oblique; area of the ligament rather wide.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Samar, Philippines (found in coarse sand and gravel at the depth of four fathoms); Cuming.

This is a very fine species, remarkable not only on account of its general form and velvety epidermis, but for the minute cancellated sculpture of the umbones.

Species 12. (Mus. Metcalfe.)

ARCA RHOMBEA. *Arca testâ quadrato-cordatâ, æquivalvi, lateribus supernè angulato-coarctatis, infra rotundatis; albidâ, pallidè rubiginoso tinctâ; epidermide corneâ, fuscâ, sæpissimè exutâ; radiatim costatâ, costis subangustis, rotundatis, anticis nodulosis; umbonibus prominentibus, valdè erectis, subremotis; ligamenti areâ latiusculâ.*

THE RHOMBOID ARK. Shell somewhat squarely heart-shaped, equivalve, sides angularly contracted at the upper part, rounded below; whitish, stained with pale rusty red; epidermis brown, horny, generally stripped off; radiately ribbed, ribs rather narrow, rounded, anterior ribs nodulous; umbones prominent, very erect, rather remote from each other; area of the ligament rather wide.

BORN, Mus., p. 90.

CHEMNITZ, Conch. Cab., vol. vii. pl. 56. f. 553.

Hab. Chinese Seas, Ceylon.

This species is very inadequately described by Lamarck; the anterior ribs are nodulous, and care must be taken not to confound it with the *Arca granosa*.

Species 13. (Mus. Metcalfe.)

ARCA TRANSVERSA. *Arca testâ elongato-ovatâ, inæquivalvi, lateribus supernè angulatis, infra rotundatis, postico subangulato-extenso; albidâ, epidermide corneâ prope marginem indutâ; radiatim costatâ, costis tricenis, planulatis, valvæ dextralis anticis, sinistralis omnibus, leviter nodulosis; umbonibus depresso-approximatis; ligamenti aread angustâ.*

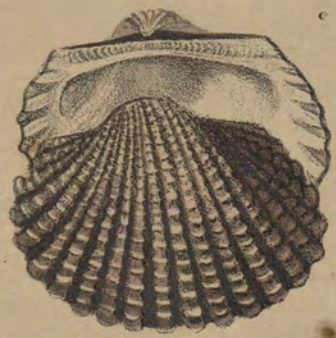
THE TRANSVERSE ARK. Shell elongately ovate, inequivalve, sides angulated at the upper part, rounded below, posterior side somewhat angularly extended; whitish, covered near the margin with a horny epidermis; radiately ribbed, ribs thirty in number, flat; anterior ribs of the right valve, all the ribs of the left valve, slightly nodulous; umbones depressly approximated; area of the ligament narrow.

SAY, Journ. Acad. Nat. Sci. Philadelphia.

Hab. United States; Say.

The length of a bivalve shell being unquestionably from the anterior to the posterior extremity, agreeable to the natural position of its animal inhabitant, the title of '*transversa*' is inappropriate as applied to this species.

14



15a

16

15b

17

18

19

Sowerby del. et lith.

ARCA.

PLATE III.

Species 14. (Mus. Cuming.)

ARCA GUBERNACULUM. *Arca testâ subelongato-ovatâ, compressiusculâ, inæquivalvi, lateribus supernè angulatis, latere antico valdè breviore, postico compresso-expanso; viridescente, epidermide inter costas squamosâ indutâ; radiatim costatâ, costis duabus vel tribus et triginta, planulatis, leviter nodulososerratis; ligamenti aread angustâ.*

THE RUDDER ARK. Shell somewhat elongately oval, rather compressed, inequivalve, sides angulated at the upper part, anterior side very much the shorter, posterior compressly expanded; greenish, covered with an epidermis, which is scaly between the ribs; radiately ribbed, ribs two or three and thirty in number, flat, slightly nodulously serrated; area of the ligament narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. Basey, island of Samar, Philippines (found in coarse sand and amongst shells at the depth of four fathoms); Cuming.

This shell may be recognised by the compressly expanded character of the posterior side.

Species 15. (Fig. *a* and *b*, Mus. Cuming.)

ARCA GRANOSA. *Arca testâ suborbiculari-ovatâ, ventricosiusculâ, æquivalvi, lateribus supernè vix angulatis, infra rotundatis; albidâ, epidermide cornea lævi indutâ; radiatim costatâ, costis ad viginti, tuberculato-crenatis, marginem versus ætate subevanidis; ligamenti aread angustiusculâ.*

THE GRANULOUS ARK. Shell somewhat orbicularly ovate, rather ventricose, equivalve, sides slightly angulated at the upper part, rounded beneath; whitish, covered with a smooth horny epidermis; radiately ribbed, ribs about twenty in number, tuberculously crenated, less distinctly developed towards the margin in adult examples; area of the ligament rather narrow.

LINNÆUS, Syst. Nat., p. 1142.

LAMARCK (*A. granosa*, var. *b* and *c*.), Anim. sans vert., vol. vi. p. 472.

Hab. Philippine Islands, &c.

The *Arca rhombea* (Sp. 12) appears to have been very much confounded by authors, myself amongst the number, (Conch. Syst., vol. i. Pl. LXXII. fig. 3, from Sowerby's 'Genera of Shells',) with the species under consideration; and the cause may be fairly traced to Lamarck. Three distinct varieties of *Arca granosa* are specified by that writer as follows:—var. *a*, ribs twenty-five or twenty-six in number, with the umbones large; var. *b*, ribs eighteen to twenty in number, with the umbones rather remote; and var. *c*, ribs eighteen to twenty in number, with the ribs more approximated. Now, from the specific importance my observations lead me to attach to the number of the ribs, I feel no hesitation in saying that Lamarck's *Arca granosa*, var. *a*, is an *Arca rhombea*, which species has twenty-six ribs with large umbones. The varieties *b* and *c* are unquestionably the true species, but the differences noted between them are nothing more than the common indications of growth. All *Arcæ* in a young state have the umbones more approximated than in an advanced state of growth; as the ligamentary area increases with age, so the umbones recede from each other.

The *Arca granosa*, it must be observed, is of an oval convex form, with the umbones rather depressed, though full and round; the *Arca rhombea*, on the other hand, is of a gibbous quadrilateral form, with the umbones remarkably prominent, and the ribs not so strongly tubercled.

Species 16. (Mus. Cuming.)

ARCA CORNEA. *Arca testâ subquadratâ, gibbosiusculâ, inæquivalvi, lateribus supernè angulatis, infra rotundatis, latere antico breviore; albâ, corio tenui, corneo, viridescente, epidermide inter costas squamosâ indutâ; radiatim costatâ, costis ad novem et viginti, valvæ dextralis planis, sinistralis noduloso-crenatis; ligamenti aread mediocri.*

THE HORNY ARK. Shell somewhat square, rather gibbous, inequivalve, sides angulated at the upper part, rounded beneath, anterior side the shorter; white, covered by a thin horny green coat with an epidermis, which is scaly between the ribs; radiately ribbed, ribs about twenty-nine in number, those of the right valve flat and smooth, of the left valve nodulously crenated; area of the ligament middling.

REEVE, Pro. Zool. Soc., 1844.

Hab. Basey, island of Samar, Philippines (found in sandy mud at low water); Cuming.

The horny covering of this species is of an unusually transparent character.

Species 17. (Mus. Cuming.)

ARCA BRASILIANA. *Arca testâ subovali, tenui, ventricosâ, valdè inæquivalvi, lateribus supernè rotundatis, attenuatis, postico subtus angulato; albidâ, rufescente pallidissimè tinctâ, epidermide subnullâ; radiatim costatâ, costis ad sex et viginti, planulatis, nonnullis subobsoletis, anticis ruguloso-crenatis, posticis lævibus, interstitiis valvæ sinistralis angustissimis, dextralis latiusculis; ligamenti areâ parvâ, latiusculâ.*

THE BRAZILIAN ARK. Shell somewhat oval, thin, ventricose, very inequivalve, sides rounded and attenuated at the upper part, posterior angulated beneath; whitish, very palely stained with light rusty red, epidermis almost wanting; radiately ribbed, ribs about twenty-six in number, flat, some of them almost obsolete, anterior ribs crenated with fine wrinkles, posterior smooth, interstices between the ribs very narrow on the left valve, rather broad on the right; ligamentary area small, but rather wide.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 473.

Arca Cardiiformis, Sowerby.

Hab. Rio Janeiro, coast of Brazil; Lamarck. San Blas, Bay of California (found on the sands); Cuming.

The *Arca Brasiliana* figured by Sowerby in his 'Genera of Shells' for the *Arca inæquivalvis*, and subsequently described by the same author in the 'Proceedings of the Zoological Society' for 1833 as a new species, is a shell of very peculiar character, inasmuch as the ribs are wider in the left valve than they are in the right; it is moreover curiously attenuated towards the hinge, and presents, as Mr. Sowerby remarks, the appearance of a common Cockle.

Species 18. (Mus. Cuming.)

ARCA TUBERCULOSA. *Arca testâ subelongato-ovatâ, turgidâ, obliquâ, æquivalvi, lateribus supernè subauriculatis, infra rotundatis, postico obliquè extenso; albidâ, epidermide crassâ nigricante-fuscâ obtectâ; radiatim costatâ, costis sex vel septem et triginta, angustis, confertis, versus marginem sparsim tuberculiferis, anticis præsertim; ligamenti areâ angustâ, umbonibus subcompressis.*

THE TUBERCLED ARK. Shell rather elongately ovate, swollen, oblique, equivalve, sides slightly auriculated at the top, rounded beneath, posterior side obliquely stretched out; whitish, covered over with a thick blackish brown epidermis; radiately ribbed, ribs six or seven and thirty in number, narrow, close-set, armed with scattered tubercles towards the margin, especially the anterior ones; area of the ligament narrow, umbones a little compressed.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Real Llejos, Central America (found at low water at the roots of the mangrove trees); Cuming.

This is a very characteristic species, and may be recognised by a feature which I have not yet observed in any other species of the genus; namely, that of having a few scattered peculiar-looking tubercles towards the margin. There is not the slightest indication of any tubercles on the umbonal portion of the shell.

Species 19. (Mus. Cuming.)

ARCA LOBATA. *Arca testâ ovali, æquivalvi, lateribus supernè vix angulatis, infra rotundatis, latere antico brevissimo, postico compresso, latissimè lobato; albidâ, fuscescente pallidè tinctâ, epidermide crassâ, subsquamosâ obtectâ; radiatim costatâ, costis ad sex et viginti, obliquis, subnodosis, posticis latioribus, prope marginem subobsoletè expansis; ligamenti areâ mediocri.*

THE LOBED ARK. Shell oval, equivalve, sides slightly angular at the upper part, rounded beneath, anterior side very short, posterior compressed, very widely lobed; whitish, covered with a thick rather scaly epidermis; radiately ribbed, ribs about six and twenty in number, oblique, slightly nodulous, posterior ribs wider, somewhat obsoletely spread near the margin; area of the ligament middling.

REEVE, Pro. Zool. Soc., 1844.

Hab. West Indies?

The chief peculiarity of this shell consists in the widely expanded compressed growth of the posterior side; it is remarkably distinct from any hitherto described species.

20

21

22

23

24

25

26

Sowerby del. et lith.

ARCA.

PLATE IV.

Species 20. (Mus. Cuming.)

ARCA GIBBOSA. *Arca testâ rotundato-ovatâ, gibbosissimâ, æquivalvi, lateribus subangulatis, infra rotundatis, latere antico breviore; albidâ, epidermide fuscâ indutâ; radiatim costatâ, costis sex vel septem et viginti, rotundatis, angustis, leviter nodulosis; ligamenti areâ mediocri.*

THE GIBBOUS ARK. Shell rotundately oval, very gibbous, equivalve, sides rather angulated, rounded beneath, anterior side shorter; white, covered with a brown epidermis; radiately ribbed, ribs six or seven and twenty in number, round, narrow, slightly nodulous; ligamentary area middling.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This shell is almost as round as the *Arca pilula*, from which it differs however essentially in having the umbones obliquely turned to the anterior, and the ribs rounded.

Species 21. (Mus. Cuming.)

ARCA AMERICANA. *Arca testâ ovato-oblongâ, valdè inæquivalvi, lateribus rotundatis, antico brevissimo, coarctato; albâ, epidermide crassiusculâ, nigricante-fuscâ, inter costas setosâ, obtectâ; radiatim costatâ, costis ad quinque et triginta, planulatis, lævibus, confertis, interstitiis profundè incisis; ligamenti areâ angustissimâ; umbonibus se ferè mutuo tangentibus.*

THE AMERICAN ARK. Shell ovately oblong, very inequivalve, sides rounded, the anterior very short and contracted; white, covered over with a rather thick blackish brown epidermis, which is bristly in the interstices between the ribs; radiately ribbed, ribs about five-and-thirty in number, flat, smooth, close-set, interstices deeply cut; area of the ligament very narrow; umbones almost touching each other.

GRAY, Wood, Ind. Test. Supp., Pl. II. fig. 1.

Hab. South Carolina, United States.

This interesting species might easily be confounded with the *Arca pexata*, which is found in the same locality. The ribs of the *Arca Americana* are six and thirty in number, very close-set, and perfectly flat and smooth; whilst those of the *Arca pexata* are only thirty in number, divided by a fine groove, and the interstices between them are delicately cancellated.

Species 22. (Mus. Cuming.)

ARCA PEXATA. *Arca testâ suborbiculari-ovatâ, vix inæquivalvi, lateribus rotundatis, antico breviore, leviter coarctato; albâ, epidermide crassiusculâ, nigricante-fuscâ, inter costas setosâ, obtectâ; radiatim costatâ, costis tricenis, medio sulco exili divisis, interstitiis eximiè cancellatis; ligamenti areâ angustissimâ; umbonibus se ferè mutuo tangentibus.*

THE HIGH-NAPPED ARK. Shell somewhat orbicularly ovate, scarcely inequivalve, sides rounded, anterior shorter; white, covered over with a rather thick blackish brown epidermis, which is bristly in the interstices between the ribs; radiately ribbed, ribs thirty in number, divided in the middle by a fine groove, interstices delicately cancellated; ligamentary area very narrow; umbones almost touching each other.

SAY, Journ. Acad. nat. sci. Phil., vol. ii.

Hab. South Carolina, United States.

Besides the differences already noted between this and the preceding species, it may be observed that the *Arca pexata* is a smaller and rounder shell than the *Arca aviformis*, and less inequivalve.

Species 23. (Mus. Cuming.)

ARCA MULTICOSTATA. *Arca testâ quadrato-rhombeâ, solidâ, æquivalvi, lateribus supernè attenuatis, angulatis, antico breviore, infra ventricoso-rotundato, postico angulato-declivi; eburneâ, epidermide fuscâ corneâ, inter costas subvelutinâ, obtectâ; radiatim costatâ, costis quinque vel sex et triginta, subangustis, rotundatis, lævibus, anticis leviter granulosis; ligamenti areâ latiusculâ; umbonibus subapproximatis.*

THE MANY-RIBBED ARK. Shell squarely rhomboid, solid, equivalve; sides attenuated and angulated at the upper part, anterior side shorter, ventricosely rounded beneath, posterior angularly extended downwards; ivory-white, covered over with a brown horny epidermis, which is a little velvety between the ribs; radiately ribbed, ribs about six-and-thirty in number, rather narrow, rounded, smooth, anterior ribs slightly granulous; area of the ligament rather broad; umbones somewhat approximated.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Gulf of Tehuantepec, Central America (dredged from the depth of twelve fathoms); Cuming.

This interesting species reminds one of the *Arca grandis*, from which it differs however not only in the number of ribs, but in the colour of its hard epidermal cuticle.

Species 24. (Mus. Cuming.)

ARCA MACULOSA. *Arca testâ obliquè ovatâ, æquivalvi, lateribus supernè subattenuato-angulatis, infra rotundatis, antico brevissimo, postico obliquè extenso; albidâ, fuscescente tinctâ, latere postico maculis perpaucis fuscis ornato, epidermide tenui, corneâ, inter costas setosâ, obtectâ; radiatim costatâ, costis ad sex et triginta, planulatis, confertis, marginibus serratis, posticis leviter nodulosis, anticis prope marginem sulco divisis; umbonibus pallidè rufescentibus; ligamenti areâ mediocri, declivi.*

THE SPOTTED ARK. Shell obliquely ovate, equivalve, sides somewhat attenuately angulated at the upper part, rounded beneath, anterior very short, posterior obliquely extended; whitish, stained here and there with faint brown, posterior side ornamented with a few dark brown spots, covered with a horny epidermis, which is bristly between the ribs; radiately ribbed, ribs about six-and-thirty in number, flat, close-set, edges serrated, posterior ribs slightly nodulous, anterior divided near the margin by a groove; umbones tinged with pale red; ligamentary area middling, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. North coast of New Holland.

It is scarcely possible to conceive two species more immediately allied than this and the *Arca scapha*, though perfectly distinguished by the number and arrangement of the ribs, which in the former are divided by a narrow cut rather than a groove; the scattered brown spots, though few in number, are also peculiar to the *Arca maculosa*.

Species 25. (Mus. Cuming.)

ARCA SCAPHA. *Arca testâ obliquè ovatâ, æquivalvi, lateribus supernè angulatis, infra rotundatis, latere antico brevissimo, postico obliquè extenso; albâ, epidermide pilosâ, inter costas setosâ, plus minusve indutâ; radiatim costatâ, costis tribus et triginta, planulatis, anticè prope marginem sulco divisis, interstitiis posticis cancellatis; umbonibus pallidè rufescentibus; areâ ligamenti mediocri, declivi.*

THE PACKET-BOAT ARK. Shell obliquely ovate, equivalve, sides angulated at the upper part, rounded beneath, anterior side very short, posterior obliquely extended; white, more or less covered with a hairy epidermis, which is bristly between the ribs; radiately ribbed, ribs three-and-thirty in number, flat, anterior ribs divided near the margin by a groove, interstices between the posterior ribs cancellated; umbones palely tinged with red; ligamentary area middling, bent inwards.

CHEMNITZ (Das paquetboot), Conch. Cab., vol. vii. p. 201. pl. 55. f. 548.

LAMARCK, Anim. sans vert., vol. vi. p. 469.

Hab. Bay of Manila (found in sandy mud at low water); Cuming.

This species appears to have been confounded by Linnæus with the *Arca antiquata*.

Species 26. (Mus. Cuming.)

ARCA EMARGINATA. *Arca testâ elongato-ovatâ, inæquivalvi, latere antico brevissimo rotundato, postico elongato, supernè emarginato, infra rotundato; albidâ, epidermide fuscâ, inter costas setosâ, obtectâ; radiatim costatâ, costis tricenis, planulatis, confertis, anticis angustis, rugulosis, sulco prope marginem subobsoletè divisis, posticis latioribus, lævibus; ligamenti areâ angustâ, declivi.*

THE EMARGINATED ARK. Shell elongately oval, inequivalve, anterior side very short, rounded, posterior elongated, emarginated at the upper part, rounded beneath; whitish, covered with a brown epidermis, which is bristly between the ribs; radiately ribbed, ribs thirty in number, flat, close-set, anterior ribs narrow, wrinkled, rather obsoletely divided near the margin by a faint groove, posterior broader, smooth; ligamentary area bent inwards.

SOWERBY, Pro. Zool. Soc., 1833.

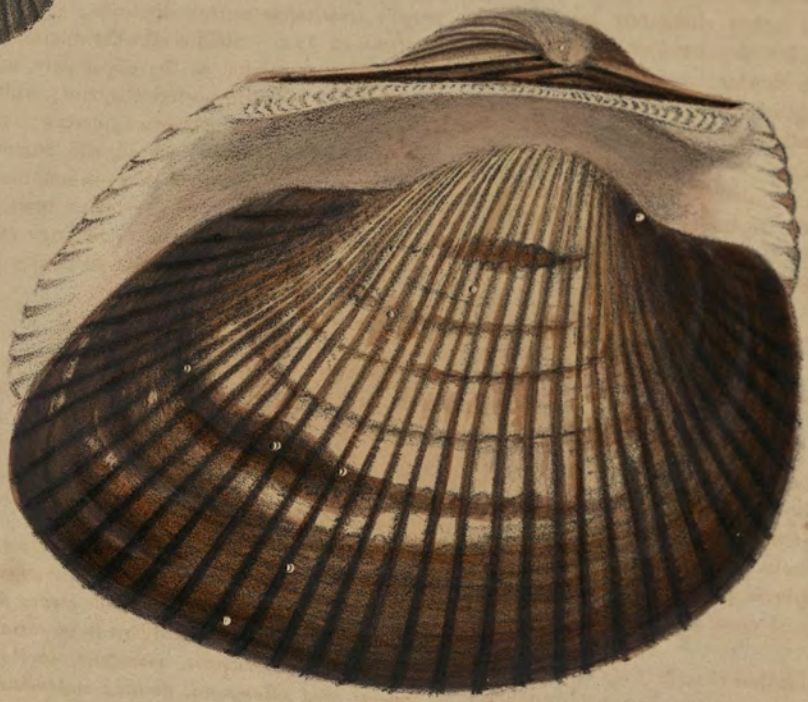
Hab. Real Llejos, Atacamas, Xipixapi, Panama, Gulf of California, &c. (dredged from sandy mud at the depth of about six or eight fathoms); Cuming.

A very interesting species, well characterised by its posterior emargination.

27

28

29



30

31

32

33

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby, del et lith.

prel. lith. Lith. Co.

ARCA.

PLATE V.

Species 27. (Mus. Metcalfe.)

ARCA COMPACTA. *Arca testâ subelongato-quadratâ, inæquivalvi, gibbosâ, lateribus supernè angulatis, antico breviore, postico leviter angulato-extenso; albidâ, epidermide fuscâ partim indutâ; radiatim costatâ, costis tricenis, valvæ dextralis subangustis, planulatis, sinistralis latioribus, rotundatis, interstitiis cancellatis; ligamenti areâ subangustâ, declivi.*

THE COMPACT ARK. Shell rather elongately square, inequivalve, gibbous, sides angulated at the upper part, anterior side the shorter, posterior slightly angularly extended; whitish, partially covered with a brown epidermis; radiately ribbed, ribs thirty in number, those of the right valve rather narrow, flat, of the left valve wider, rounded, with the interstices cancellated; area of the ligament rather narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This is a short compact shell of rather solid growth.

Species 28. (Mus. Cuming.)

ARCA PERTUSA. *Arca testâ subobliquè quadratâ, vix æquivalvi, lateribus supernè angulatis, infrà rotundatis; albidâ, viridescente tinctâ, epidermide fuscâ sparsim indutâ; radiatim costatâ, costis duabus vel tribus et triginta, confertis, plano-convexis, subtilissimè pertusis; ligamenti areâ latiusculâ, umbonibus subcentralibus.*

THE PRICKED ARK. Shell rather obliquely square, nearly equivalve, sides angulated at the upper part, rounded beneath; white, stained with light green, sparingly covered with a brown epidermis; radiately ribbed, ribs two or three and thirty in number, close-set, flatly convex, very finely pricked; area of the ligament rather wide, umbones nearly central.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mouth of the Gambia, Africa.

The ribs of this shell are very finely pricked or indented, a character which I do not remember to have observed in any other species.

Species 29. (Mus. Cuming.)

ARCA CISTULA. *Arca testâ subquadratâ, inæquivalvi, lateribus supernè angulatis, antico infrà rotundato, postico quadrato; albâ, epidermide tenui fuscescente, inter costas squamosâ, indutâ; radiatim costatâ, costis angustis, numerosis, septem vel octo et triginta, valvæ sinistralis umbones versus subtilissimè nodulosis; ligamenti areâ mediocri; umbonibus subacutis, prope extremitatem anticam dispositis.*

THE LITTLE BOX ARK. Shell somewhat square, inequivalve, sides angulated at the upper part, anterior side rounded beneath, posterior square; white, covered with a thin, light brown epidermis, scaly between the ribs; radiately ribbed, ribs narrow, numerous, seven or eight and thirty in number, those of the left valve very finely nodulous towards the umbones; area of the ligament middling; umbones sharp, situated near the anterior extremity.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

An interesting species, remarkable for the neatness and regularity of the ribs, as well as for the very anterior situation of the umbones.

Species 30. (Mus. Cuming.)

ARCA INFLATA. *Arca testâ obliquè ovatâ, tenui, inflatâ, vix æquivalvi, lateribus supernè leviter angulatis, infrà rotundatis; albidâ, epidermide corneâ fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis numerosis, quadragenis, planulatis, lævibus; ligamenti areâ subangustâ, declivi; umbonibus tumidis, paululùm approximatis.*

THE INFLATED ARK. Shell obliquely ovate, thin, inflated, nearly equivalve, sides slightly angulated at the upper part, rounded beneath; white, covered with a brown horny epidermis, scaly in the interstices between the ribs; radiately ribbed, ribs numerous, forty in number, flat, smooth; ligamentary area rather narrow, bent inwards; umbones swollen, a little approximated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Ilo Ilo, isle of Panay, Philippines (found in soft mud at the depth of six fathoms); Cuming.

This is a light inflated shell of rather large size, at present unique in the collection of Mr. Cuming.

Species 31. (Mus. Cuming.)

ARCA CYMBÆFORMIS. *Arca testâ elongato-ovatâ, tumidiusculâ, inæquivalvi, posticè attenuatâ; albidâ, epidermide corneâ viridescente, inter costas squamosâ, indutâ; radiatim costatâ, costis duabus et triginta, valvæ sinistralis rotundatis, tuberculato-crenatis, valvæ dextralis planulatis, anticis tantum crenatis; ligamenti areâ parvâ, declivi.*

THE BOAT-SHAPED ARK. Shell elongately ovate, rather swollen, inequivalve, attenuated posteriorly; white, covered with a green horny epidermis, scaly between the ribs; radiately ribbed, ribs two and thirty in number, those of the left valve rounded and tuberculously crenated, of the right valve the anterior only crenated; area of the ligament small, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This is a shell of very peculiar growth, inasmuch as the posterior side is smaller and more attenuated than the anterior, a condition reverse to that usually presented.

Species 32. (Mus. Cuming.)

ARCA JAPONICA. *Arca testâ elongato-ovatâ, tenuiculâ, valdè inæquivalvi, lateribus rotundatis, postico latiore, antico brevissimo; albâ, epidermide corneâ fuscescente, inter costas squamosâ, indutâ; radiatim costatâ, costis quinque et triginta, angustis, lævibus, planulatis, anticis subobsoletè nodulosis; ligamenti areâ angustissimâ.*

THE JAPAN ARK. Shell elongately oval, rather thin, very inequivalve, sides rounded, posterior side the wider, anterior very short; white, covered with a light brown horny epidermis, scaly between the ribs; radiately ribbed, ribs five and thirty in number, narrow, smooth, flat, the anterior rather obsoletely nodulous; area of the ligament very narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. Coast of Japan (found in sandy mud); Dr. Siebald.

The lateral extremities of this shell are peculiarly rounded.

Species 33. (Mus. Metcalfe.)

ARCA VELLICATA. *Arca testâ trapeziformi, subcompressâ, in medio leviter contractâ, vix æquivalvi, lateribus supernè angulatis, antico infrà rotundato, postico angulato-expanso; albidâ, epidermide, inter costas squamosâ, partim indutâ; radiatim costatâ, costis angustis, numerosissimis, quinquagenis aut pluribus, anticis sulco divisis; ligamenti areâ angustâ; umbonibus latis, peculiariter depresso-vellicatis.*

THE PINCHED ARK. Shell trapeziform, a little compressed, slightly contracted in the middle, nearly equivalve, sides angulated at the upper part, anterior side rounded beneath, posterior angularly expanded; whitish, partially covered with an epidermis which is scaly between the ribs; radiately ribbed, ribs narrow, very numerous, upwards of fifty in number, anterior ones divided by a groove; area of the ligament narrow; umbones wide, peculiarly depressly pinched.

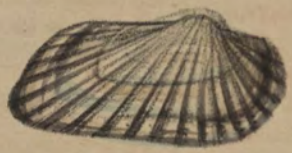
REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This is a very remarkable shell, both on account of the large number of ribs, and of the peculiar compression of the umbones.

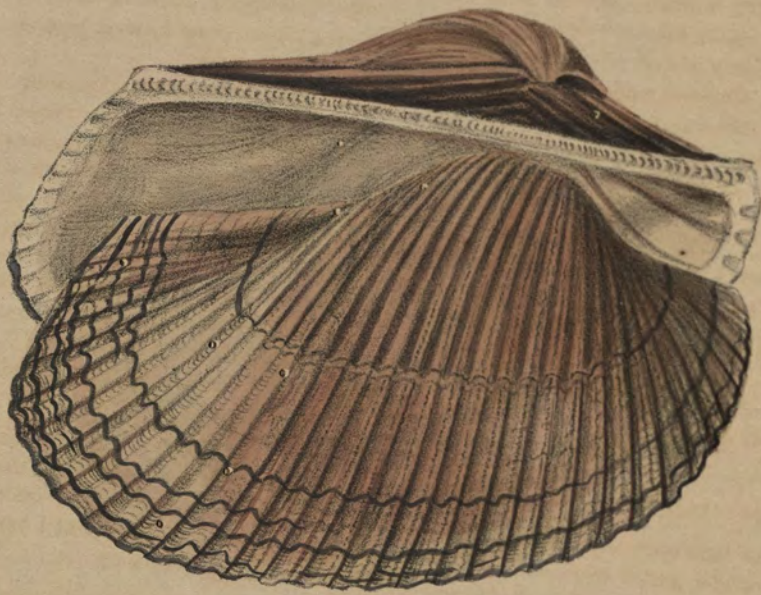
34

35



36

37



38

39

40.

41.

Sowerby, del. et lith.

ARCA.

PLATE VI.

Species 34. (Mus. Cuming.)

ARCA CONCINNA. *Arca testâ elongato-ovatâ, subcylindraceâ, inæquivalvi, lateribus supernè angulatis, infrà rotundatis; albidâ, epidermide tenui fuscescente, inter costas exilissimè setosâ, indutâ; radiatim costatâ, costis ad tricenas, anterioribus rugulosis, sulco divisis, interstitiis lineis elevatis decussatis; ligamenti areâ angustâ, elongatâ, anticè utrinque crenulatâ.*

THE ELEGANT ARK. Shell elongately oval, somewhat cylindrical, inequivalve, sides angulated at the upper part, rounded beneath; whitish, covered with a very thin light brown epidermis, very finely bristly between the ribs; radiately ribbed, ribs about thirty in number, the most anterior ones wrinkled and divided by a groove, interstices between the ribs crossed with raised lines; ligamentary area narrow, elongated, crenulated at the anterior end on both sides.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Gulf of Nicoiya, Central America (found in coarse sand at the depth of twelve fathoms); Cuming.

Mr. Sowerby describes this shell as having ligament on the posterior side only: this, however, is impossible; the ligament was rubbed off the anterior side of the specimen which served for his description.

Species 35. (Mus. Brit.)

ARCA AURICULATA. *Arca testâ ovato-cordatâ, æquivalvi, lateribus supernè angulatis, antico brevissimo, postico subcompresso, plus minusve auriculato; albidâ, epidermide olivaceo-fuscâ indutâ; radiatim costatâ, costis ad tricenas, noduloso-crenatis; ligamenti areâ elongatâ, subangustâ.*

THE AURICULATED ARK. Shell ovately heart-shaped, equivalve, sides angulated at the upper part, anterior side very short, posterior somewhat compressed, more or less auriculated; whitish, covered with an olive-brown epidermis; radiately ribbed, ribs about thirty in number, nodulously crenated; area of the ligament long and rather narrow.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 472.

CHENU, Delessert's Recueil de Coquilles, pl. 11. f. 12. *a, b, c,*

Hab. ——?

Care must be taken not to confound this shell with the young of *Arca Deshayesii*, which is also auriculated, but of more slender growth.

Species 36. (Mus. Cuming.)

ARCA GAMBIENSIS. *Arca testâ elongato-quadratâ, tenuiculâ, valdè compressâ, in medio coarctatâ, æquivalvi, lateribus rotundatis, postico subangulato extenso; albidâ, epidermide tenui olivaceâ, sparsim setigerâ, indutâ; radiatim costatâ, costis duabus vel tribus et viginti, lævigatis, plano-expansis, lirâ exili intercurrente; ligamenti areâ parvâ, angustâ; umbonibus angulato-mucronatis.*

THE GAMBIA ARK. Shell elongately square, rather thin, very compressed, contracted in the middle, equivalve, sides rounded, posterior rather angularly extended; whitish, covered with a thin olivaceous epidermis, armed here and there with fine bristles; radiately ribbed, ribs two or three and twenty in number, smooth, flatly expanded, with a fine ridge running between them; area of the ligament small, narrow; umbones angularly pointed.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mouth of the Gambia, Africa (found in sandy mud in deep water).

The ribs of this shell become peculiarly flattened and spread out towards the margin, and there is a fine ridge running down the centre of the intermediate grooves. This is the only species in which I have as yet observed any kind of fine interribbing.

Species 37. (Mus. Cuming.)

ARCA CUNEATA. *Arca testâ obliquè ovatâ, æquivalvi, marginem versus coarctatâ, lateribus supernè angulatis, infrà obliquè rotundatis; albidâ, radiatim costatâ, costis ad vicenas, rotundatis, irregulariter nodosis; ligamenti areâ latissimâ, declivi; umbonibus parvis, distantibus.*

THE WEDGE-LIKE ARK. Shell obliquely ovate, equivalve, contracted towards the margin, sides angulated at the upper part, obliquely rounded beneath; whitish, radiately ribbed, ribs about twenty in number, rounded, irregularly noduled; area of the ligament very wide, bent inwards; umbones small, distant.

REEVE, Pro. Zool. Soc., 1844.
Hab. Zanzibar.

The great width of the ligamentary area, separating the umbones asunder to a considerable extent, imparts a wedge-like form to this shell, by which it may be easily recognised.

Species 38. (Mus. Brit.)

ARCA SECTICOSTATA. *Arca testâ elongato-ovatâ, gibbosissimâ, tenuiculâ, lateribus supernè angulatis, infrà subobliquè rotundatis; albidâ, fuscescente partim tinctâ; radiatim costatâ, costis numerosis, angustis, ad quadragenas, quamplurimis sulcosubpro fundo divisis; ligamenti areâ elongatâ, latiusculâ; umbonibus tumidis.*

THE CUT-RIBBED ARK. Shell elongately ovate, very gibbous, rather thin, sides angulated at the upper part, rather obliquely rounded beneath; whitish, partially stained with light rusty brown; radiately ribbed, ribs numerous, narrow, about forty in number, most of which are cut or divided by a rather deep groove; area of the ligament elongated, rather wide; umbones full.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

This shell is probably one of those that have been confounded with the *Arca antiquata* (Plate IX.); it differs in having a much greater number of ribs, and a larger proportion of them more distinctly grooved.

Species 39. (Mus. Cuming.)

ARCA FERRUGINEA. *Arca testâ ovato-oblongâ, æquivalvi, lateribus rotundatis; albidâ, epidermide ferrugineo-fuscâ indutâ; radiatim costatâ, costis ad septem et viginti, angustis, compressis, subtilissimè nodulosis; ligamenti areâ subangustâ; umbonibus obliquè incurvis.*

THE RUSTY ARK. Shell ovately oblong, equivalve, sides rounded; whitish, covered with a rusty brown epidermis; radiately ribbed, ribs about twenty-seven in number, narrow, compressed, very finely nodulous; area of the ligament rather narrow; umbones obliquely incurved.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

The ribs of this species are unusually narrow, and being finely nodulous, present a kind of beaded appearance.

Species 40. (Mus. Cuming.)

ARCA RADIATA. *Arca testâ ovato-oblongâ, æquivalvi, lateribus rotundatis; albidâ, fuscescente ad umbones tinctâ, epidermide sparsim indutâ; radiatim costatâ, costis ad tricenas, angustissimis, obsoletè nodulosis, interstitiis clathratis; ligamenti areâ mediocri.*

THE RAYED ARK. Shell ovately oblong, equivalve, sides rounded; whitish, stained with light brown about the umbones, sparingly covered with epidermis; radiately ribbed, ribs about thirty in number, very narrow, obsoletely noduled, interstices between the ribs latticed; area of the ligament middling.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

The ribs are much less prominently developed than in the preceding species; they are also narrower, more numerous, and less strongly noduled.

Species 41. (Mus. Hankey.)

ARCA OBLIQUA. *Arca testâ ovatâ, valdè obliquâ, æquivalvi, lateribus supernè angulatis, infrà rotundatis, antico brevissimo, postico obliquè expanso; albâ, epidermide fuscescente sericâ, inter costas setosâ, indutâ; radiatim costatâ, costis quinque vel sex et triginta, planulatis, confertis, interstitiis subtilissimè striatis, anticis posticisque leviter crenatis, anticis sulco divisis; ligamenti areâ subangustâ, declivi; umbonibus approximatis.*

THE OBLIQUE ARK. Shell ovate, very oblique, equivalve, sides angulated at the upper part, rounded beneath, anterior side very short, posterior obliquely expanded; white, covered with a light brown, silken epidermis, bristly between the ribs; radiately ribbed, ribs five or six and thirty in number, flat, close-set, interstices between them very finely striated, the most anterior and posterior ribs lightly crenated, the anterior divided by a groove; area of the ligament rather narrow, bent inwards; umbones approximated.

REEVE, Pro. Zool. Soc., 1844.
Hab. West coast of Africa.

This is a very interesting species, and altogether one of very distinct character.

42

43

45

46

47

48

Sowerby, del. et lith.

ARCA.

PLATE VII.

Species 42. (Mus. Cuming.)

ARCA MYRISTICA. *Arca testâ subquadrato-ovatâ, gibbosiusculâ, inæquivalvi, lateribus angulato-rotundatis; albâ, epidermide tenui rubido-fuscescente indutâ; radiatim costatâ, costis tribus vel quatuor et viginti, valvæ sinistralis omnibus nodulosis, dextralis anticis tantum; ligamenti areâ subangustâ.*

THE NUTMEG ARK. Shell somewhat squarely ovate, rather gibbous, inequivalve, sides angularly rounded; white, covered with a thin reddish brown epidermis; radiately ribbed, ribs three or four and twenty in number, of the left valve all nodulous, of the right valve the anterior only nodulous; area of the ligament rather narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. Jimamailan, island of Negros, Philippines (found in sandy mud at the depth of three fathoms); Cuming.

In this species there is no trace of that peculiar green colour which is so prominent in the following.

Species 43. (Mus. Cuming.)

ARCA CHALCANTHUM. *Arca testâ oblongo-quadratâ, subcompressâ, inæquivalvi, lateribus supernè angulatis, latere antico brevissimo, postico latiore, compressâ; albidâ, corio corneo viridi, epidermide fuscâ, indutâ; radiatim costatâ, costis octo et viginti, angustis, valvæ sinistralis leviter nodulosis; ligamenti areâ subangustâ.*

THE COPPERAS ARK. Shell oblong-square, somewhat compressed, inequivalve, sides angulated at the upper part, anterior side very short, posterior wider, compressed; whitish, covered with a green horny cuticle, over which is a partial, brown epidermis; radiately ribbed, ribs eight and twenty in number, narrow, those of the left valve slightly nodulous; area of the ligament rather narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. San Nicolas, island of Zebu, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

The peculiar colour of this shell gives it the appearance of having been stained with green copperas.

Species 44. (Mus. Cuming.)

ARCA LUZONICA. *Arca testâ elongato-quadratâ, gibbosiusculâ, æquivalvi, lateribus supernè angulatis, infrà rotundatis, latere antico brevi; albidâ, corio corneo viridescente, epidermide fuscâ, indutâ; radiatim costatâ, costis octo et viginti, latiusculis, valvæ sinistralis subobsoletè nodulosis; ligamenti areâ subangustâ, declivi.*

THE LUZON ARK. Shell elongately square, rather gibbous, equivalve; sides angulated at the upper part, rounded beneath, anterior side short; whitish, covered with a greenish cuticle, and a brown epidermis; radiately ribbed, ribs eight and twenty in number, rather broad, those of the left valve somewhat obsoletely nodulous; area of the ligament rather narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Luzon, Philippines (found in sandy mud at low water); Cuming.

This is a stouter shell than the preceding species; it is more gibbous, and the ribs are broader.

Species 45. (Mus. Brit.)

ARCA SENILIS. *Arca testâ obliquè cordatâ, æquivalvi, supernè attenuatâ, lateribus rotundatis, postico subextenso; albâ, corio corneo, mutico, crasso, viridescente-fusco, indutâ; radiatim costatâ, costis tredecim aut quatuordecim, lævibus, sex septemve medianis valdè majoribus, latioribus, cæteris plus minusve obsoletis; umbonibus prominentibus, subtilissimè incurvis; ligamenti areâ brevi, latiusculâ.*

THE AGED ARK. Shell obliquely heart-shaped, equivalve, attenuated at the upper part, sides rounded, posterior a little extended; white, covered with a thick, beardless, dark greenish brown, horny epidermis; radiately ribbed, ribs thirteen or fourteen in number, smooth, the six or seven middle ribs very much larger and broader than the rest, which are more or less obsolete; umbones prominent, very finely curved or hooked inwards; area of the ligament short and rather broad.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3309.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 473.

Hab. Coast of Africa.

This species has a smaller number of ribs than any other of the genus, and only six or seven of these are at all distinctly developed.

Species 46. (Mus. Metcalfe.)

Arca rotundicostata. *Arca testâ ovatâ, gibbosâ, æquivalvi, lateribus supernè angulatis, antico brevi, rotundato, postico subangulato-extenso; albâ, umbones versus fuscescente tinctâ; radiatim costatâ, costis ad vicenas, subdistantibus, elevatis, rotundatis, crenatis, valvæ sinistralis potiùs latioribus; ligamenti areâ latâ, paululùm concavo-declivi.*

The round-ribbed Ark. Shell ovate, gibbous, equivalve, sides angulated at the upper part, anterior short, rounded, posterior rather angularly extended, stained with brown towards the umbones; radiately ribbed, ribs about twenty in number, rather distant, rounded, crenated, those of the left valve rather the wider; area of the ligament broad, a little concavely bent inwards.

Reeve, Pro. Zool. Soc., 1844.

Hab. —— ?

This may probably be one of the numerous species that have been confounded under the common title of *Arca antiquata*.

Species 47. (Mus. Cuming.)

Arca Deshayesii. *Arca testâ ovato-oblongâ, gibbosiusculâ, æquivalvi, lateribus supernè angulatis, antico brevi, rotundato, postico subelongato-extenso, leviter auriculato; albâ, epidermide fuscâ holosericâ, inter costas setosâ, indutâ; radiatim costatâ, costis ad septem et viginti, rotundatis, subtilissimè nodulosostriatis, anterioribus sulco divisis; ligamenti areâ longissimâ, plano-excavatâ, sulcis rhomboideis incisâ; umbonibus prope anticam extremitatem dispositis.*

Deshayes' Ark. Shell ovately oblong, rather gibbous, equivalve, sides angulated at the upper part, anterior short, rounded, posterior rather elongately extended, slightly auriculated; white, covered with a brown silken epidermis, bristly between the ribs; radiately ribbed, ribs about seven and twenty in number, rounded, very finely nodulously striated, the most anterior ones divided by a groove; area of the ligament very long, flatly excavated, engraved with lozenge-shaped grooves; umbones situated near the anterior extremity.

Hanley, Species of Shells, p. 155, note.

Hab. —— ?

This species may be recognised by the length of the cardinal area, and the manner in which the posterior extremity of it is compressed and inclined to become auriculated.

Species 48. (Mus. Cuming.)

Arca clathrata. *Arca testâ subquadrato-ovatâ, æquivalvi, lateribus leviter compressis, supernè angulatis, infrà rotundatis; albidâ, epidermide tenui fuscescente, inter costas exilissimè setosâ, indutâ; radiatim costatâ, costis leviter crenatis, interstitiis profundis, lineis elevatis clathratis; ligamenti areâ subelongatâ.*

The latticed Ark. Shell somewhat squarely oval, equivalve, sides slightly compressed, angulated at the upper part, rounded beneath; whitish, covered with a thin, light brown epidermis, which is very finely bristly between the ribs; radiately ribbed, ribs slightly crenulated, interstices deep, latticed with raised lines; ligamentary area rather elongated.

Reeve, Pro. Zool. Soc., 1844.

Hab. Islands of Bureas and Ticao, Philippines (found at the depth of about six fathoms); Cuming.

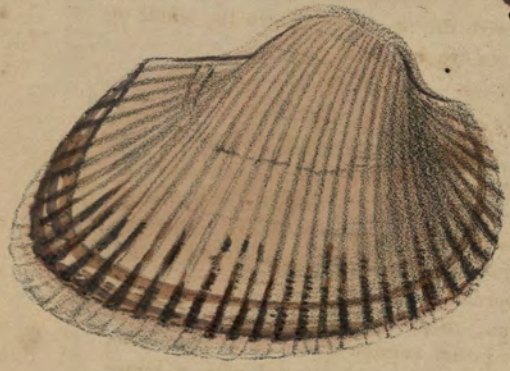
A small species, in which the interstices between the ribs, which are very deeply engraved, are distinctly latticed with raised lines.

50

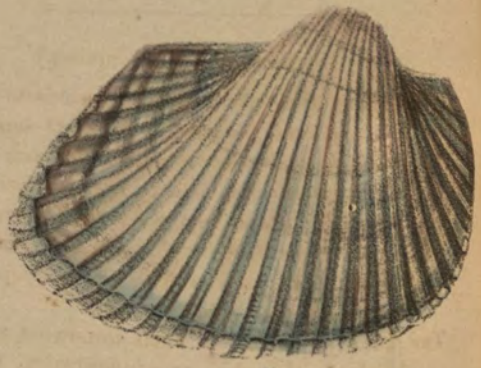
49

51

52



53



54

55

Sowerby del. et lith.

prod. lith. Linn. imp.

ARCA.

PLATE VIII.

Species 49. (Mus. Cuming.)

ARCA OVATA. *Arca testâ subelongato-ovatâ, tenui, valdè inæquivalvi, lateribus supernè angulato-rotundatis, postico breviore, subtùs angulato-extenso, antico attenuato-rotundato; albidâ, rufescente-fusco tinctâ, epidermide tenuissimâ; radiatim costatâ, costis ad tricenas, anticis nodulosis, posticis minus distinctioribus, planulatis, lævibus, costis valvæ sinistralis valdè latioribus; ligamenti areâ parvâ, latiusculâ.*

THE OVATE ARK. Shell rather elongately ovate, thin, very inequivalve, sides angularly rounded at the upper part, posterior side the shorter, angularly extended beneath, anterior side attenuately rounded; whitish, stained with light reddish brown, epidermis very slight; radiately ribbed, ribs about thirty in number, anterior nodulous, posterior less distinct, flat, smooth, ribs of the left valve much broader than those of the right; area of the ligament small, rather wide.

REEVE, Pro. Zool. Soc., 1844.

Hab. St. Elena, South America (found in sandy mud at the depth of from six to eight fathoms); Cuming.

This shell partakes of the characters of the *Arcæ Brasiliana* and *incongrua*; it is however more elongated than either, and the ribs are narrower and more in number.

Species 50. (Mus. Cuming.)

ARCA INCONGRUA. *Arca testâ subquadrato-orbiculari, tenuiculâ, valdè inæquivalvi, lateribus supernè angulatis, postico breviore; albâ, epidermide tenui fuscescente inter costas indutâ; radiatim costatâ, costis septem vel octo et viginti; valvæ dextralis anticis gradato-crenatis, sinistralis omnibus crenatis, costis valvæ sinistralis sublatioribus; areâ ligamenti latiusculâ; umbonibus subapproximatis.*

THE INCONGRUOUS ARK. Shell somewhat squarely orbicular, rather thin, very inequivalve, sides angulated at the upper part, posterior side the shorter; white, covered with a thin light brown epidermis between the ribs; ribs seven or eight and twenty in number; in the left valve anterior ribs elevately crenated, in the right valve all crenated, ribs of the left valve rather broader than those of the right; area of the ligament rather wide; umbones a little approximated.

SAY, Journ. Acad. Nat. Sci. Philadelphia, vol. ii.

Hab. United States.

The extreme posterior ribs of the right, or smaller valve of this shell are peculiarly narrower than the rest.

Species 51. (Mus. Metcalfe.)

ARCA CRENATA. *Arca testâ subelongato-quadratâ, subcompressâ, solidiusculâ, vix æquivalvi, lateribus angulato-rotundatis; albidâ, epidermide tenui fuscâ indutâ; radiatim costatâ, costis septem vel octo et triginta, valvarum ambarum omnibus noduloso-crenatis; ligamenti areâ subangustâ, declivi, umbonibus depresso-approximatis.*

THE CRENATED ARK. Shell somewhat elongately square, a little compressed, rather solid, nearly equivalve, sides angularly rounded; whitish, covered with a thin brown epidermis; radiately ribbed, ribs seven or eight and thirty in number, the whole of which in both valves are nodulously crenated; area of the ligament rather narrow, bent inwards, umbones depressly approximated.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This species may be distinguished by its multiplicity of ribs, coupled with the manner in which the whole of them in both valves are crenated.

Species 52. (Mus. Cuming.)

ARCA GLOBOSA. *Arca testâ globosâ, tumidâ, subæquivalvi, lateribus supernè subangulatis, antico breviore; albidâ, epidermide corneâ fuscâ indutâ; radiatim costatâ, costis duabus vel tribus et triginta, lævibus, planulatis; ligamenti areâ mediocri, umbonibus latiusculis, subapproximatis.*

THE GLOBOSE ARK. Shell globose, swollen, nearly equivalve, sides rather angular at the upper part, anterior the shorter; whitish, covered with a brown horny epidermis; radiately ribbed, ribs two or three and thirty in number, smooth, flat; area of the ligament middling; umbones rather broad, a little approximated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Catbalonga, Island of Samar, Phillppines (found in coarse sand and gravel at the depth of four fathoms); Cuming.

Chiefly characterized by its globular form, and the smooth horny nature of the epidermis.

Species 53. (Mus. Cuming.)

ARCA RUFESCENS. *Arca testâ elongato-ovatâ, valdè inæquivalvi, lateribus supernè leviter angulatis, infrà rotundatis, postico subelongato-extenso; albidâ, rufescente tinctâ, epidermide inter costas partim indutâ; radiatim costatâ, costis numerosis, quadragenis, confertis, lævibus; ligamenti areâ mediocri, umbonibus subtruncatis.*

THE RED-TINGED ARK. Shell elongately ovate, very inequivalve, sides slightly angulated at the upper part, rounded beneath, posterior side rather elongately extended; whitish, tinged with red, partially covered between the ribs with an epidermis; radiately ribbed, ribs numerous, forty in number, close-set; area of the ligament middling, umbones somewhat truncated.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This shell is of a more solid structure than the *Arca inæquivalvis*; the ribs are much more numerous and close-set, and independent of the difference of colour, there is a truncated peculiarity in the umbones.

Species 54. (Mus. Sauf.)

ARCA INÆQUIVALVIS. *Arca testâ elongato-ovatâ, valdè inæquivalvi, lateribus supernè angulatis, infrà rotundatis, postico subextenso; albidâ, viridescente tinctâ, epidermide fuscâ, inter costas setosâ, partim indutâ; radiatim costatâ, costis duabus vel tribus et triginta, lævibus, planulatis; ligamenti areâ subangustâ, umbonibus paululùm approximatis.*

THE INEQUIVALVE ARK. Shell elongately ovate, very inequivalve, sides angulated at the upper part, rounded beneath, posterior side somewhat extended; whitish, stained with light green, partially covered with a brown epidermis, bristly between the ribs; radiately ribbed, ribs two or three and thirty in number, smooth, flat; area of the ligament rather narrow, umbones a little approximated.

BRUGUIÈRE, Enc. Méth. vers, vol. i. part i. p. 106.

Hab. ——?

The ribs of this species are sculptured, as it were, with a remarkable degree of sharpness and regularity; the umbones are full, and rather inclined to approximate over the ligamentary area.

Species 55. (Mus. Cuming.)

ARCA CONTRARIA. *Arca testâ obliquè ovatâ, solidâ, turgidâ, æquivalvi, lateribus rotundatis, postico brevi, antico elongato-extenso; albidâ, epidermide sericâ fuscâ crassâ partim indutâ; radiatim costatâ, costis tricenis, lævibus; ligamenti areâ latiusculâ, declivi; umbonibus contrariè contortis.*

THE CONTRARY ARK. Shell obliquely ovate, solid, swollen, equivalve, sides rounded, posterior side short, anterior elongately extended; whitish, partially covered with a thick brown silken epidermis; radiately ribbed, ribs thirty in number, smooth; area of the ligament rather wide, bent inwards; umbones curiously contorted in the reverse direction.

REEVE, Pro. Zool. Soc., 1844.

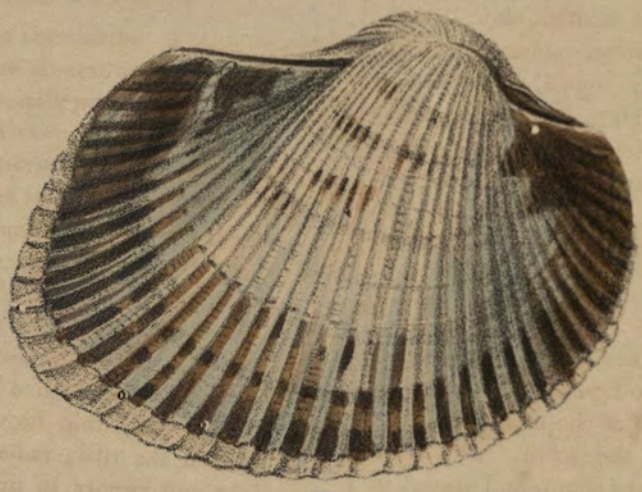
Hab. ——?

This is another contrary or reversed species, and a very remarkable one, the shell being completely reversed, whilst the position of the ligamentary area remains the same. The *Arcæ contraria* and *reversa* (Pl. I. Sp. 5.) are the only species of the genus I have as yet seen exhibiting this peculiarity of growth.

56

57

58



59

60

61

62

Sowerby. del. et lith.

prel. lith. Linn. imp.

ARCA.

PLATE IX.

Species 56. (Mus. Hanley.)

ARCA INDICA. *Arca testâ subquadrato-ovatâ, tenuiculâ, inæquivalvi, latere antico brevissimo, postico subcompresso; albidâ, viridescente tinctâ, epidermide tenui, fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis duabus vel tribus et triginta, omnibus versus marginem sulco divisis, lateribus umbones versus subtilissimè crenulatis; umbonibus approximatis; ligamenti areâ nullâ.*

THE INDIAN ARK. Shell somewhat squarely oval, rather thin, inequivalve, anterior side very short, posterior a little compressed; whitish, stained with green, covered with a thin brown epidermis, bristly between the ribs; radiately ribbed, ribs two or three and thirty in number, all divided by a groove towards the margin, very finely crenulated on each side towards the umbones; umbones approximated; no ligamentary area.

GMELIN, Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 473.

Hab. ——?

This and the *Arca brevifrons* are the only species of ribbed *Arcæ* in which there is no ligamentary area, and in the *Arca Indica* this condition of the hinge occasions a very peculiar modification of the teeth. The teeth posterior to the umbones are very small, and are set in a fine row as in the hinge of *Nucula*; but those anterior to the umbones are larger, very few in number, and jumbled together, as it were, in a small rude cluster. Another peculiar feature in this shell is, that the whole of the ribs of both valves are divided by a groove towards the margin.

Species 57. (Mus. Cuming.)

ARCA ANGICOSTATA. *Arca testâ subquadrato-ovatâ, subæquivalvi, lateribus supernè angulatis, infrà rotundatis, antico brevi; albidâ, fuscescente partim tinctâ, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis ad tricenas, anticis angustis, subdistantibus, leviter crenulatis, posticis latioribus, expansioribus; ligamenti areâ latiusculâ.*

THE NARROW-RIBBED ARK. Shell somewhat squarely oval, nearly equivalve, sides angulated at the upper part, rounded beneath, anterior side short; whitish, partially stained with light brown, covered with a brownish epidermis that is scaly between the ribs; radiately ribbed, ribs about thirty in number, the anterior narrow, rather distant, and slightly crenulated, the posterior wider and more expanded; area of the ligament rather wide.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

There is a very unusual disproportion in the width of the ribs of this species, the anterior ribs being exceedingly narrow, whilst the posterior are wider and spread out as it were.

Species 58. (Mus. Cuming.)

ARCA LORICATA. *Arca testâ subquadratâ, gibbosâ, lateribus supernè attenuato-angulatis, antico brevi, rotundato, postico angulato-extenso; albidâ, corio corneo cæruleo-viridescente loricatâ, epidermide tenui, fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis septem vel octo et viginti, planiusculis, acutangulis; umbonibus subapproximatis; ligamenti areâ leviter declivi.*

THE MAILED ARK. Shell somewhat square, gibbous, sides attenuately angled at the upper part, anterior side short, rounded, posterior angularly extended; whitish, covered with a strong horny bluish green cuticle, and a thin brown epidermis that is scaly between the ribs; radiately ribbed, ribs seven or eight and twenty in number, rather flat, sharp-angled; umbones somewhat approximated; ligamentary area slightly bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This shell is covered with a peculiarly strong horny cuticle, and differs from any previously described species in the arrangement and formation of the ribs.

Species 59. (Mus. Cuming.)

ARCA DISPARILIS. *Arca testâ ovatâ, tenui, subcompressâ, valdè inæquivalvi, lateribus angulato-rotundatis, latere postico subcompresso-expanso; albidâ, corio corneo tenui cæruleo-viridescente, epidermide fuscâ indutâ; radiatim costatâ, costis sex vel septem et triginta, planiusculis, umbones versus obsoletè crenulatis; umbonibus subapproximatis; ligamenti areâ angustâ, declivi.*

THE UNEQUAL ARK. Shell ovate, thin, somewhat compressed, very inequivalve, sides angularly rounded,

87961

posterior side rather compressly expanded; whitish, covered with a thin, horny, bluish green cuticle and a brown epidermis; radiately ribbed, ribs six or seven and thirty in number, rather flat, obsoletely crenulated towards the umbones; umbones somewhat approximated; area of the ligament narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The nearest approach to the *Arca inæquivalvis*, but a shell of more compressed growth; the valves exhibit a still greater disparity of size, and the ribs are rather more numerous.

Species 60. (Mus. Metcalfe.)

ARCA ANTIQUATA. *Arca testâ abbreviato-ovatâ, crassâ, valdè gibbosâ, æquivalvi, lateribus supernè angulatis, antico brevi, rotundato, postico subangulato-extenso; albidâ, maculis perpaucis sparsis fuscescentibus posticè ornatâ, epidermide fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis ad tricenas, angustis, distantibus, acutangularibus, anticis prope marginem sulco divisis, umbones versus noduloso-crenatis; ligamenti areâ latiusculâ.*

THE ANCIENT ARK. Shell shortly ovate, thick, very gibbous, equivalve, sides angulated at the upper part, anterior side short, rounded, posterior somewhat angularly extended; whitish, ornamented on the posterior side with a few scattered light brown spots, covered with a brown epidermis that is bristly between the ribs; radiately ribbed, ribs about thirty in number, narrow, distant, sharp-angled, anterior ribs divided by a groove near the margin, nodulously crenated towards the umbones; area of the ligament rather broad.

LINNÆUS, Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 470.

Hab. ——?

This shell I take to be the original *Arca antiquata* of Linnæus; and it is essentially distinct from the *Arcæ Deshayesii, secticostata,* and others which have been confounded together under the same common title.

The light brown spots which are scattered about the posterior side of the *Arca antiquata* are apparently of insignificant character, but it is important to notice that out of the sixty-eight species of unattached *Arcæ* which have now come under my observation, the *Arca maculosa* is the only other species in which any trace of them may be discovered.

Species 61. (Mus. Cuming.)

ARCA CREBRICOSTATA. *Arca testâ elongato-quadratâ, æquivalvi, lateribus supernè angulatis, antico infrà rotundato, postico elongato-extenso, subattenuato; albâ, epidermide fuscâ holosericâ indutâ; radiatim costatâ, costis numerosissimis, tribus vel quatuor et quadraginta, planis, latiusculis, creberrimis, anterioribus sulco divisis, subtilissimè crenulatis; umbonibus latis, subapproximatis; ligamenti areâ angustâ, declivi.*

THE CLOSE-RIBBED ARK. Shell elongately square, equivalve, sides angulated at the upper part, anterior rounded beneath, posterior angularly extended, a little attenuated; white, covered with a brown velvety epidermis; radiately ribbed, ribs very numerous, three or four and forty in number, flat, rather broad, very close-set, the more anterior ribs divided by a groove, very finely crenulated; umbones broad, rather approximated; area of the ligament narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The ribs of this species are very characteristic, being comparatively broad, flat, very close-set, and more in number than in any other of the genus.

Species 62. (Mus. Cuming.)

ARCA HIANS. *Arca testâ elongato-ovatâ, æquivalvi, anticè hiante, lateribus rotundatis, postico attenuato-extenso; albidâ, fuscescente pallidè tinctâ, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis duabus vel tribus et triginta, latiusculis, planulatis, anticis subobsoletè crenulatis, sulco latissimo divisis; umbonibus subapproximatis; ligamenti areâ angustâ, profundè declivi.*

THE GAPING ARK. Shell elongately ovate, equivalve, gaping anteriorly, sides rounded, the posterior attenuately extended; whitish, palely stained with light brown, covered with a soft brown epidermis, scaly between the ribs; radiately ribbed, ribs two or three and thirty in number, rather broad, flat, the anterior ribs rather obsoletely crenulated, divided by a very broad groove; umbones somewhat approximated; area of the ligament narrow, deeply bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The shape of the *Arca hians* approaches somewhat to that of the *Arca cymbæformis*, but the species differ most essentially from each other on examination. In the *Arca hians* the valves are equal, the anterior ribs are divided by an unusually broad groove, and the shell gapes at the anterior end to the extent of about three-sixteenths of an inch, a peculiarity of which I have not observed the slightest indication in any other species of this division of the *Arcæ*.

63

64

65

66

67a

67b

ROYAL ASIATIC SOCIETY — LIBRARY OF THE BOMBAY BRANCH OF THE

68

Sowerby. del. et lith.

prel. lith. Linn. Soc.

ARCA.

PLATE X.

Species 63. (Mus. Cuming.)

ARCA AVICULOIDES. *Arca testâ elongato-oblongâ, vix æquivalvi, lateribus supernè angulatis, auriculatis, postico præcipuè, infrà rotundatis, latere antico brevissimo, postico elongato; albâ, fuscescente posticè virgatâ, epidermide fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis septem vel octo et triginta, planulatis, confertis, anticis subtilissimè crenulatis; ligamenti areâ angustâ.*

THE AVICULA-LIKE ARK. Shell elongately oblong, scarcely equivalve, sides angulated at the upper part, auriculated, the posterior side especially, rounded beneath, anterior side very short, posterior elongated; white, faintly striped on the posterior side with brown, covered with a soft brown epidermis that is bristly between the ribs; radiately ribbed, ribs seven or eight and thirty in number, flat, close-set, anterior ribs very finely crenulated; area of the ligament narrow.

Arca auriculata, Sowerby, Pro. Zool. Soc., 1833.

Hab. St. Elena, South America (found in a muddy bottom at the depth of ten fathoms); Cuming.

I am obliged to publish this pretty little species under a new name, in consequence of the word *auriculata* having been pre-occupied by Lamarck (vide Species 35. Plate VI.).

Species 64. (Mus. Cuming.)

ARCA OCCLUSA. *Arca testâ subquadratâ, valdè gibbosâ, inæquivalvi, lateribus supernè attenuato-angulatis; albâ; radiatim costatâ, costis septem vel octo et viginti, subdistantibus, valvæ dextralis lævibus, sinistralis nodulosis; umbonibus prominentibus, peculiariter approximatis; ligamenti areâ subdeclivi.*

THE CLOSED ARK. Shell nearly square, very gibbous, inequivalve, sides attenuately angled at the upper part; white, radiately ribbed, ribs seven or eight and twenty in number, rather distant, those of the right valve smooth, of the left valve nodulous; umbones prominent, peculiarly approximated; area of the ligament rather bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The umbones of this shell are so closely approximated over the ligamentary area, as to prevent the valves from opening beyond the extent of about a quarter of an inch.

Species 65. (Mus. Metcalfe.)

ARCA AMBIGUA. *Arca testâ subquadratâ, tenuiculâ, inæquivalvi, lateribus subattenuato-angulatis, antico infrà rotundato, postico angulato; albidâ, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis tribus vel quatuor et triginta, angustis, rotundatis, anticis subtilissimè rotundatis; ligamenti areâ subangustâ.*

THE AMBIGUOUS ARK. Shell somewhat square, rather thin, inequivalve, sides rather attenuately angulated, anterior rounded beneath, posterior angulated; whitish, covered with a brown epidermis, scaly between the ribs; radiately ribbed, ribs three or four and thirty in number, narrow, rounded, the anterior ribs very finely nodulous; area of the ligament rather narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The *Arca cistula* is the nearest allied species to this.

Species 66. (Mus. Cuming.)

ARCA CEPOIDES. *Arca testâ subquadrato-ovatâ, tenui, ventricosâ, inæquivalvi, lateribus angulato-rotundatis; albidâ, fuscescente pallidè tinctâ, corio corneo cærulescente, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis duabus et triginta, lævibus, planulatis, costis valvæ sinistralis sublatioribus; umbonibus tumidis; ligamenti areâ latiusculâ, valdè declivi.*

THE ONION-LIKE ARK. Shell somewhat squarely ovate, thin, ventricose, inequivalve, sides angularly rounded; white, palely stained with light brown, covered with a bluish horny cuticle, and a brown epidermis that is scaly between the ribs; radiately ribbed, ribs two and thirty in number, smooth, flat, those of the left valve rather wider than those of the right; umbones swollen; area of the ligament rather wide, very much bent inwards.

REEVE, Pro. Zool. Soc., 1844.

63

64

65

66

67a

67b

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

68

Sowerby. del. et lith.

prel. lith. Linn. imp.

ARCA.

PLATE X.

Species 63. (Mus. Cuming.)

ARCA AVICULOIDES. *Arca testâ elongato-oblongâ, vix æquivalvi, lateribus supernè angulatis, auriculatis, postico præcipuè, infrà rotundatis, latere antico brevissimo, postico elongato; albâ, fuscescente posticè virgatâ, epidermide fuscâ, inter costas setosâ, indutâ; radiatim costatâ, costis septem vel octo et triginta, planulatis, confertis, anticis subtilissimè crenulatis; ligamenti areâ angustâ.*

THE AVICULA-LIKE ARK. Shell elongately oblong, scarcely equivalve, sides angulated at the upper part, auriculated, the posterior side especially, rounded beneath, anterior side very short, posterior elongated; white, faintly striped on the posterior side with brown, covered with a soft brown epidermis that is bristly between the ribs; radiately ribbed, ribs seven or eight and thirty in number, flat, close-set, anterior ribs very finely crenulated; area of the ligament narrow.

Arca auriculata, Sowerby, Pro. Zool. Soc., 1833.

Hab. St. Elena, South America (found in a muddy bottom at the depth of ten fathoms); Cuming.

I am obliged to publish this pretty little species under a new name, in consequence of the word *auriculata* having been pre-occupied by Lamarck (vide Species 35. Plate VI.).

Species 64. (Mus. Cuming.)

ARCA OCCLUSA. *Arca testâ subquadratâ, valdè gibbosâ, inæquivalvi, lateribus supernè attenuato-angulatis; albâ; radiatim costatâ, costis septem vel octo et viginti, subdistantibus, valvæ dextralis lævibus, sinistralis nodulosis; umbonibus prominentibus, peculiariter approximatis; ligamenti areâ subdeclivi.*

THE CLOSED ARK. Shell nearly square, very gibbous, inequivalve, sides attenuately angled at the upper part; white, radiately ribbed, ribs seven or eight and twenty in number, rather distant, those of the right valve smooth, of the left valve nodulous; umbones prominent, peculiarly approximated; area of the ligament rather bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The umbones of this shell are so closely approximated over the ligamentary area, as to prevent the valves from opening beyond the extent of about a quarter of an inch.

Species 65. (Mus. Metcalfe.)

ARCA AMBIGUA. *Arca testâ subquadratâ, tenuiculâ, inæquivalvi, lateribus subattenuato-angulatis, antico infrà rotundato, postico angulato; albidâ, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis tribus vel quatuor et triginta, angustis, rotundatis, anticis subtilissimè rotundatis; ligamenti areâ subangustâ.*

THE AMBIGUOUS ARK. Shell somewhat square, rather thin, inequivalve, sides rather attenuately angulated, anterior rounded beneath, posterior angulated; whitish, covered with a brown epidermis, scaly between the ribs; radiately ribbed, ribs three or four and thirty in number, narrow, rounded, the anterior ribs very finely nodulous; area of the ligament rather narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The *Arca cistula* is the nearest allied species to this.

Species 66. (Mus. Cuming.)

ARCA CEPOIDES. *Arca testâ subquadrato-ovatâ, tenui, ventricosâ, inæquivalvi, lateribus angulato-rotundatis; albidâ, fuscescente pallidè tinctâ, corio corneo cærulescente, epidermide fuscâ, inter costas squamosâ, indutâ; radiatim costatâ, costis duabus et triginta, lævibus, planulatis, costis valvæ sinistralis sublatioribus; umbonibus tumidis; ligamenti areâ latiusculâ, valdè declivi.*

THE ONION-LIKE ARK. Shell somewhat squarely ovate, thin, ventricose, inequivalve, sides angularly rounded; white, palely stained with light brown, covered with a bluish horny cuticle, and a brown epidermis that is scaly between the ribs; radiately ribbed, ribs two and thirty in number, smooth, flat, those of the left valve rather wider than those of the right; umbones swollen; area of the ligament rather wide, very much bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. San Miguel, South America (found in sandy mud); Cuming.

This is a fine bold species, but it does not exhibit any very striking peculiarity of character.

Species 67. (Mus. Cuming.)

ARCA LABIOSA. *Arca testâ obliquè ovatâ, compressâ, inæquivalvi, lateribus supernè angulatis, antico infrà rotundato, postico obtuso-angulato; albâ, epidermide corneâ fuscescente indutâ; radiatim costatâ, costis numerosis, septem vel octo et triginta, anticis obsoletè rugulosis, costis valvæ sinistralis sublatioribus; ligamenti aream angustissimâ.*

THE FULL-LIPPED ARK. Shell obliquely ovate, compressed, inequivalve, sides angulated at the upper part, the anterior rounded beneath, the posterior obtusely angled; white, covered with a light brown epidermis; radiately ribbed, ribs numerous, seven or eight and thirty in number, the anterior ribs obsoletely wrinkled, ribs of the left valve rather wider than those of the right; area of the ligament very narrow.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Tumbez, coast of Peru (found in soft mud at the depth of seven fathoms); Cuming.

The circumstance of this shell having been known to Mr. Sowerby only in a very young state will account for the apparent discordance of our descriptions.

Species 68. (Mus. Hankey.)

ARCA HANKEYANA. *Arca testâ obliquè ovatâ, crassiusculâ, valdè gibbosâ, tumidâ, æquivalvi, lateribus rotundatis, supernè attenuatis, latere antico brevissimo, postico obliquè extenso; albâ, epidermide tenui, inter costas hirsutâ, sparsim indutâ; radiatim costatâ, costis duabus vel tribus et triginta, planulatis, confertis, quadriliratis; umbonibus parvis, distantibus; ligamenti aream brevi, latâ, declivi.*

HANKEY'S ARK. Shell obliquely ovate, rather thick, very gibbous, swollen, equivalve, sides rounded, attenuated at the upper part, anterior side very short, posterior obliquely extended; white, sparingly covered with a slight epidermis that is hairy between the ribs; radiately ribbed, ribs two or three and thirty in number, flat, close-set, composed of four ridges; umbones small, distant; area of the ligament short, wide, and bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. Harbour of Mozambique (found in a mass of white coral on the reefs at low water, spring tide); Hankey.

I close this division of the genus with the new species, which exhibits a peculiarity in the structure of the ribs of great novelty and interest, each of them being composed of four distinctly separated ridges.

And I have great pleasure in naming this important species after the gentleman to whom I am indebted for it, Lieut. Hankey, R.N., a zealous conchologist, whose researches on the coast of Africa have greatly contributed to science.

69

70

71

72

73

74

75

Sowerby, del. et lith.

Jovel, lith. Linn. imp.

ARCA.

PLATE XI.

Species 69. (Mus. Cuming.)

ARCA ZEBRA. *Arca testâ ovato-oblongâ, tenuiculâ, latere antico brevi, gibbosissimo, tumido, postico elongato, attenuato-compresso, subtruncato, carinâ prominente, obtusâ, ab umbone ad marginem decurrente, margine ventrali hiatu byssi maximo; anticè albâ, posticè fuscâ, strigis fuscis undatis undiquè pictâ; parte mediânâ anticâque radiatim striatis, striis elevatis, nodulosо-crenatis, alternatim majoribus, parte posticâ quadricostatâ, costis rudibus, obtusis; umbonibus subinclinatis; ligamenti areâ latissimâ, concavâ; sulcis ligamentariis perpaucis, angustis, in areæ parte anticâ tantùm incisis.*

THE ZEBRA ARK. Shell ovately oblong, rather thin, anterior side short, very gibbous, swollen, posterior elongated, attenuately compressed, slightly truncated, with a prominent blunt keel running down from the umbone to the margin, ventral margin with a very large opening for the byssus; anterior side white, posterior brown, painted with brown waved zebra-like streaks; middle and anterior portions of the shell radiately striated, striæ raised, nodulously crenated, alternately larger, posterior four-ribbed, ribs rude, blunt; umbones bent forwards; area of the ligament very wide, concave; ligamentary grooves narrow, few in number, engraved on the anterior part of the area only.

Byssoarca zebra, Swainson, Zoological Illustrations.

Hab. Bay of Manila and island of Corregidor, Philippines (found under stones at low water); Cuming.

The byssus of the *Arca zebra* is of a dark horny laminal structure, and in the specimen here figured is large enough to cover an area upon the substance to which it has adhered, of an oval shape about an inch and a half long by one inch broad. The hinge has a remarkably slight ligamentary connection.

Species 70. (Mus. Hanley.)

ARCA NAVICULARIS. *Arca testâ quadrato-elongatâ, in medio leviter coarctatâ, solidiusculâ, latere antico rotundato, postico compresso-angulato, truncato, margine ventrali bysso vix hiante; albido-luteolâ, strigis latis perpaucis rubido-brunneis sparsim ornatâ; radiatim costatâ, costis prominentibus, irregularibus, subobsoletè tuberculosis; umbonibus remotis; ligamenti areâ planulatâ, rhombo sulcifero corio corneo nigricante-fusco induto.*

THE SHIP-LIKE ARK. Shell squarely elongated, slightly contracted in the middle, rather solid, anterior side rounded, posterior compressly angulated, truncated, ventral margin but little gaping; yellowish white, sparingly ornamented with a very few faint, broad, reddish brown streaks; radiately ribbed, ribs prominent, irregular, rather obsoletely tubercled; umbones remote; area of the ligament flat, the diamond-shaped space enclosing the ligamentary grooves coated with a dark brown horny cuticle.

BRUGUIÈRE, Enc. Méth. vers, p. 99.

Arca Noæ, var., Chemnitz, Conch. Cab., vol. vii. pl. 54. f. 533.

Arca retusa? Lamarck.

Hab. China (attached to stones).

Neither Lamarck nor Deshayes appears to have been acquainted with this interesting and rare species, though accurately described by Bruguière, and as accurately figured by Chemnitz. It is not the Mediterranean *Arca tetragona* of Poli, as those authors supposed, but one of distinct character, from a very remote locality.

Species 71. (Mus. Cuming.)

ARCA MACULATA. *Arca testâ obliquè oblongâ, subrhomboideâ, gibbosissimâ, lateribus supernè angulatis, antico parvo, postico valdè longiore, carinâ validâ ab umbone ad marginem decurrente, margine ventrali bysso paululùm hiante; albidâ, posticè fusco pallidè maculatâ; superficie totâ laminis fimbriatis, gradatim digestis, subtilissimè insculptâ; ligamenti areâ latiusculâ, rhombo sulcifero parvo, anticè disposito.*

THE SPOTTED ARK. Shell obliquely oblong, somewhat diamond-shaped, very gibbous, sides angulated at the upper part, anterior small, posterior much longer, with a strong keel running down from the umbone to the margin, ventral margin but little gaping; whitish, palely spotted on the posterior side within the keel with brown; entire surface very finely carved with fimbriated laminæ, arranged one over the other like steps; area of the ligament rather wide, the diamond-shaped space enclosing the ligamentary grooves small, situated anteriorly.

Byssoarca maculata, Sowerby, Pro. Zool. Soc., 1833.

Hab. Lord Hood's Island, Pacific Ocean (found attached to large shells); Cuming.

The *Arca maculata*, as Mr. Sowerby notices, is covered with a thin pale-coloured epidermis, which is very conspicuous on the posterior ridge, where it forms a row of plumose bristles.

Species 72. (Mus. Cuming.)

ARCA NOÆ. *Arca testâ elongato-oblongâ, latere antico brevissimo, subattenuato-coarctato, postico subcompresso-expanso, supernè emarginato, carinâ obtusâ ab umbone ad marginem decurrente, margine ventrali bysso plus minusve hiante; fuscâ, mediânè incarnato-albâ, fusco undatim strigatâ; radiatim costatâ, costis rudibus, irregularibus, squamoso-rugosis, antico-medianis ferè obsoletis; ligamenti areâ plano-concavâ.*

NOAH'S ARK. Shell elongately oblong, anterior side very short, somewhat attenuately contracted, posterior rather compressly expanded, emarginated to-

wards the upper part, with a blunt keel running from the umbone to the margin, ventral margin more or less gaping; brown, fleshy white about the middle, painted with waved streaks of brown; radiately ribbed, ribs rude, irregular, scaly-wrinkled, anterior middle ribs nearly obsolete; area of the ligament flatly concave.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3306, No. 2.

Hab. Mediterranean (attached to stones).

It is scarcely necessary to observe how greatly this species varies in growth according to its circumstances of attachment.

Species 73. (Mus. Metcalfe.)

ARCA IMBRICATA. *Arca testâ abbreviato-oblongâ, latere antico gibboso, plus minusve tumido, postico attenuato, truncato, carinâ obtusâ ab umbone ad marginem decurrente, margine ventrali bysso hiante; nigricante-fuscâ, anticè cinereo-cæruleo pallidè tinctâ; parte mediânâ anticâque subtilissimè radiatim liratis, liris striis elevatis longitudinalibus imbricato-decussatis, parte posticâ costatâ, costis obtusis, subdistantibus; umbonibus inclinato-approximatis; ligamenti aread valdè concavâ, rhombo sulcifero parvo, anticè disposito.*

THE IMBRICATED ARK. Shell shortly oblong, anterior side gibbous, more or less swollen, posterior attenuated, truncated, with a blunt keel running from the umbone to the margin, ventral margin moderately gaping; blackish brown, palely tinged anteriorly with ashy blue; middle and anterior portions of the shell very finely radiately ridged, ridges imbricately crossed with raised longitudinal striæ, posterior portion ribbed, ribs blunt, rather distant; umbones bent over, rather approximated; area of the ligament very concave, diamond-shaped space bearing the ligamentary grooves small, situated at the anterior end.

BRUGUIÈRE (not of Poli), Enc. Méth. (1789) vers, p. 98.

Arca umbonata? } Lamarck.
Arca ventricosa? }

Hab. East Indies (found under stones).

This species was described with great minuteness by Bruguière in the 'Encyclopédie Méthodique,' about two years before the publication of Poli's beautiful work, in which the same specific title is employed in reference to another of the same genus.

Species 74. (Mus. Cuming.)

ARCA TRUNCATA. *Arca testâ elongato-oblongâ, latere antico brevissimo, postico elongato, truncato, carinâ obtusâ ab umbone ad marginem decurrente, margine ventrali bysso hiante; cinereo-fuscâ, strigis fuscis undatis umbones versus pallidè tinctâ; parte mediânâ anticâque subtilissimè radiatim liratâ, liris striis elevatis longitudinalibus imbricato-decussatis, parte posticâ costatâ, costis obtusis, subdistantibus, interstitiis rugosis; umbonibus mediocribus; ligamenti aread pla-niusculo-concavâ, fusco-strigatâ; sulcis ligamentariis angustis, perpaucis, in areæ parte anticâ tantùm incisis.*

THE TRUNCATED ARK. Shell elongately oblong, anterior side very short, posterior elongated, truncated, with a blunt keel running from the umbone to the margin, ventral margin gaping; ashy brown, palely stained towards the umbones with brown waved streaks; middle and anterior portions of the shell finely radiately ridged, imbricately crossed with raised longitudinal striæ, posterior portion ribbed, ribs obtuse, rather distant, interstices wrinkled; umbones middling; area of the ligament rather flatly concave, streaked with brown; ligamentary grooves narrow, few in number, engraved on the anterior part of the area only.

Byssoarca truncata, Sowerby, Pro. Zool. Soc., 1833.

Hab. Gallapagos Islands, Pacific Ocean (found attached to stones); Cuming.

An interesting species, partaking of the characters of *Arcæ zebra* and *imbricata*, having the anterior ligamentary grooves of the former with indications of the same zebra-like painting, and the imbricated sculpture of the latter with the same truncated extremity.

Species 75. (Mus. Cuming.)

ARCA PACIFICA. *Arca testâ trapezio-oblongâ, latere antico brevissimo, parvo, supernè acuminato, postico maximo, alato-expanso, emarginato, carinâ obtusâ ab umbone ad marginem decurrente, margine ventrali bysso comparatè paulùm hiante; albidâ, rubido tinctâ, strigis rubidis latis undiquè pictâ; radiatim costatâ, costis irregularibus, nodosis, mediis minoribus; umbonibus remotissimis; ligamenti aread latissimâ, plano-concavâ, rhombo sulcifero, maximo, corio corneo nigricante-fusco induto, sulcis ligamentariis latis, subdistantibus.*

THE PACIFIC ARK. Shell trapezoidly oblong, anterior side very short, small, acuminated at the upper part, posterior very large, expanded like a wing, emarginated, with a blunt keel running from the umbone to the margin, ventral margin gaping comparatively but little; whitish, tinged with red (brick-red), everywhere painted with broad waved streaks of the same colour; radiately ribbed, ribs irregular, knobbed, middle ribs smaller; umbones very remote from each other; area of the ligament very broad, flatly concave, diamond-shaped space enclosing the ligamentary grooves very large, covered with a dark brown horny cuticle, grooves broad and rather distant.

Byssoarca Pacifica, Sowerby, Pro. Zool. Soc., 1833.

Hab. St. Elena, South America (found adhering to each other in bunches attached to rocky ground at the depth of from six to eighteen fathoms); Cuming.

This beautiful species may be recognized by its strong ribbing, and by the wing-like expansion of the posterior side.

76

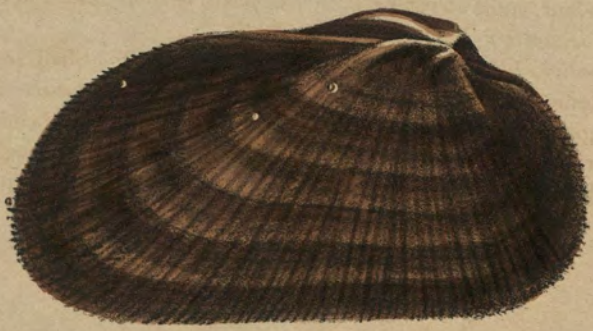
77

78

79

80

81



82

Sowerby. del. et lith.

prel. lith. Lnn. imp.

ARCA.

PLATE XII.

Species 76. (Mus. Cuming.)

ARCA LITHODOMUS. *Arca testâ longissimâ, tenuiculâ, angustâ, cylindraceo-cuneiformi, decussato-striatâ, subtilissimè et concinnè imbricato-squamed, ut plurimum, umbones versus præcipuè, erosâ; latere antico brevissimo, obliquè truncato, carinâ acutâ setigerâ ab umbone ad marginem decurrente; postico longissimo, extremitatem versus compresso, rotundato-acuminato, margine ventrali bysso paululùm hiante; ligamenti aread angustissimâ, profundè declivi, anticè obtuso-angulatâ, posticè acuminatâ, corio corneo nigricante indutâ; sulcis ligamentariis ad duodecim, obliquis, subdistantibus.*

THE LITHODOMUS-LIKE ARK. Shell very long, rather thin, narrow, cylindrically wedge-shaped, decussately striated, very finely and beautifully imbricately scaled, but for the most part eroded, especially towards the umbones; anterior side very short, obliquely truncated, with a bristly keel running from the umbone to the margin; posterior very long, compressed towards the extremity, rotundately acuminated, ventral margin a little gaping; area of the ligament very narrow, deeply bent inwards, anteriorly obtusely angled, posteriorly acuminated, covered with a black horny cuticle; ligamentary grooves about twelve in number, oblique, rather distant.

Byssoarca Lithodomus, Sowerby, Pro. Zool. Soc., 1833.

Hab. Monte Christo, West Columbia (found in stones at low water); Cuming.

This extraordinary species of *Arca* most probably becomes imbedded in stones and masses of rock by the aid of some powerful solvent secretion, like the *Lithodomi* and other terebrating mollusks.

Species 77. (Mus. Cuming.)

ARCA OBTUSA. *Arca testâ oblongâ, Modiolæformi, lateribus obtuso-rotundatis, margine ventrali bysso paululùm hiante; albâ, epidermide nigricante sulsquamosâ partim indutâ; radiatim striatâ, striis elevatis; umbonibus depressiusculis, approximatis; ligamenti aread parvâ, angustâ, profundè declivi.*

THE OBTUSE ARK. Shell oblong, Modiola-shaped, sides obtusely rounded, ventral margin a little gaping; white, partially covered with a rather scaly blackish epidermis; radiately striated, striæ raised; umbones rather depressed, approximated; area of the ligament small, narrow, deeply bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. Coast of Japan (under stones); Dr. Siebald.

Very like a *Modiola* in shape, but not the recent analogue of the fossil *A. Modiolæformis* of Deshayes.

Species 78. (Mus. Cuming.)

ARCA ILLOTA. *Arca testâ abbreviato-ovatâ, ventraliter compressâ, subcuneiformi, lateribus supernè valdè attenuatis, margine ventrali bysso vix hiante; albidâ, epidermide tenui, peculiariter foliaceâ, indutâ; radiatim striatâ, striis rudibus, elevatis, striisaliis distantioribus subirregulariter decussatis; umbonibus grandibus, compresso-approximatis; ligamenti aread angustâ, minutâ, ferè occultâ.*

THE UNWASHED ARK. Shell shortly ovate, ventrally compressed, somewhat wedge-shaped, sides very much attenuated at the upper part, ventral margin scarcely gaping; whitish, covered with a thin, peculiarly foliaceous epidermis; radiately striated, striæ rude, raised, somewhat irregularly crossed by other more distant striæ; umbones large, compressly approximated; area of the ligament narrow, very small, almost concealed.

Byssoarca illota, Sowerby, Pro. Zool. Soc., 1833.

Hab. Gulf of Nicoiya, Central America (found under stones); Cuming.

This species is of very peculiar shape, and has a curious light foliaceous epidermis, extending over the ventral margin, like the horny epidermis of the *Solemya*.

Species 79. (Mus. Cuming.)

ARCA VELATA. *Arca testâ ovato-oblongâ, curviusculâ, subcompressâ, lateribus supernè leviter angulatis, infrà rotundatis, latere antico parvo, brevissimo, postico latiore, margine ventrali bysso hiante; albâ, epidermide fuscâ, peculiariter squamosâ, versus marginem indutâ, squamis acuminatis; radiatim striatâ, striis fortibus, elevatis, nodulosis; ligamenti aread angustâ, declivi; sulcis ligamentariis numerosis, confertis.*

THE CLOTHED ARK. Shell ovately oblong, somewhat compressed, rather curved, sides angulated at the upper part, rounded beneath, anterior side small, very short, posterior much wider, ventral margin gaping; white, covered towards the margin with a

peculiarly scaled epidermis, scales acuminated; radiately striated, striæ strong, raised, nodulous; area of the ligament narrow, bent inwards; ligamentary grooves numerous, close-set.

Byssoarca velata, Sowerby, Pro. Zool. Soc., 1833.

Hab. Lord Hood's and Chain Islands, Pacific Ocean (found attached to shells); Cuming.

The epidermis of this shell lies at the posterior end in thick-set, brittle, horny plates.

Species 80. (Mus. Cuming.)

Arca obliquata. *Arca testâ subcuneiformi, curvâ, medio coarctatâ, lateribus rotundatis, latere antico parvo, brevissimo, postico latiore, subobliquè expanso, margine ventrali bysso vix hiante; albidâ, viridescente tinctâ, epidermide fuscâ acuminato-squamosâ versus marginem indutâ; radiatim striatâ, striis elevatis, numerosis, confertis; umbonibus approximatis; ligamenti aream angustâ.*

The crooked Ark. Shell somewhat wedge-shaped, curved, contracted in the middle, sides rounded, anterior side small, very short, posterior much wider, rather obliquely expanded, ventral margin scarcely, if at all, gaping; white, stained with green, covered towards the margin with a brown acuminately scaled epidermis; radiately striated, striæ raised, numerous, close-set; umbones approximated; area of the ligament narrow.

Gray, Wood, Ind. Test. Supp., pl. 2. f. 4. Hanley, Species of Shells, p. 158.

Hab. Calbayog, island of Samar, Philippines (found under stones at low water); Cuming.

The outline of this shell approaches very nearly to that of a figure in the 'Encyclopédie Méthodique,' to which Lamarck refers for the *Arca Magellanica* of Chemnitz.

Species 81. (Mus. Cuming.)

Arca decussata. *Arca testâ ovato-oblongâ, lateribus supernè subangulatis, infrà angulato-rotundatis, latere antico brevissimo, posticè latiore, subexpanso, margine ventrali bysso paululùm hiante; albâ, fuscescente pallidissimè tinctâ, epidermide fuscâ squamoso-setosâ versus marginem indutâ; decussatim striatâ, striis radiantibus elevatioribus; umbonibus approximatis; ligamenti aream angustissimâ, declivi, ferè occultâ.*

The decussated Ark. Shell ovately oblong, sides rather angulated at the upper part, angularly rounded beneath, anterior side very short, posterior wider, rather expanded, ventral margin a little gaping; white, very palely stained with light brown, covered towards the margin with a scaly bristly epidermis; decussately striated, radiated striæ the more raised; umbones approximated; area of the ligament very narrow, bent inwards, almost concealed.

Byssoarca decussata, Sowerby, Pro. Zool. Soc., 1833.

Hab. Lord Hood's and Chain Islands, Pacific Ocean; and Philippine Islands (attached to shells); Cuming.

A delicately sculptured shell, in which the epidermis rises from between the striæ in scaly bristles.

Species 82. (Mus. Cuming.)

Arca fusca. *Arca testâ ovato-oblongâ, lateribus rotundatis, latere antico brevi, postico subelongato, margine ventrali bysso paululùm hiante; rubido-fuscâ, ad umbones albiradiatâ, epidermide subtilissimè setosâ sparsim indutâ; striis exilibus, elevatis, confertis, decussatâ; umbonibus approximatis; ligamenti aream angustissimâ, profundè declivi.*

The brown Ark. Shell ovately oblong, sides rounded, anterior side short, posterior rather elongated, ventral margin a little gaping; reddish brown, rayed with white at the umbones, sparingly covered with a very fine bristly epidermis; decussated with delicate, close-set, raised striæ; umbones approximated; area of the ligament very narrow, deeply bent inwards.

Bruguière, Enc. Méth. vers, p. 102.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 466.

Amygdalum frixum sive tostum, Chemnitz.

Arca barbata, var., Gmelin.

Hab. Island of Mindoro, Philippines (found under stones at low) water,; Cuming.

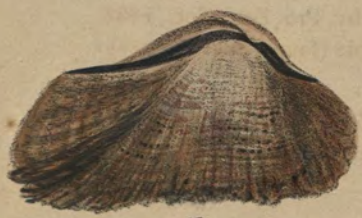
This species may easily be distinguished from the *Arca barbata* by the white rays which characterize the umbones.

83

84

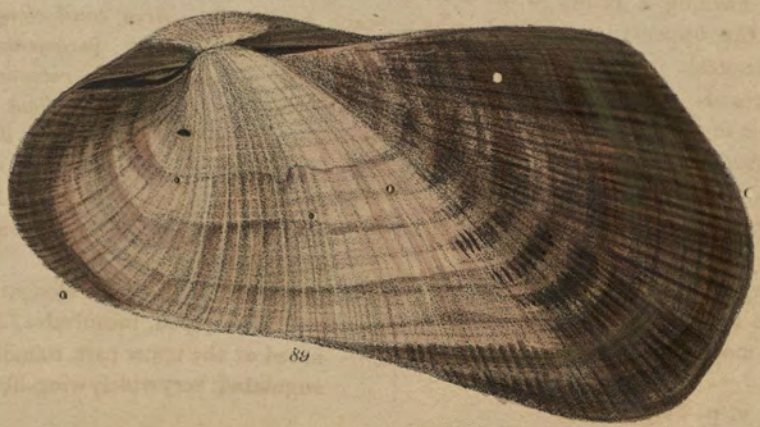
85

86



87

88



89

ARCA.

PLATE XIII.

Species 83. (Mus. Cuming.)

ARCA BARBATA. *Arca testâ oblongo- vel elongato-ovatâ, subcompressâ, lateribus rotundatis, latere antico valdè breviore, margine ventrali bysso paululùm hiante; fuscescente, rubido-fusco plus minusve tinctâ et variegatâ, epidermide setosâ indutâ; radiatim striatâ, striis elevatis, granulosis, subirregularibus; umbonibus compresso-approximatis; ligamenti areâ angustâ, profundè declivi.*

THE BEARDED ARK. Shell oblong or elongately ovate, a little compressed, sides rounded, anterior side much the shorter, ventral margin a little gaping; light brown, more or less variegated and stained with dark reddish brown, covered with a bristly epidermis; radiately striated, striæ raised, granulous, rather irregular; umbones compressly approximated; area of the ligament narrow, deeply bent inwards.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3306.

Hab. Mediterranean and other seas of Europe.

This ancient and well-known species varies considerably in shape according to its situations of attachment; it differs from the preceding species in not having the white umbonal rays.

Species 84. (Mus. Cuming.)

ARCA ANGULATA. *Arca testâ rhomboideâ, plano-compressâ, lateribus acutangulis, antico acuminato, postico areâ latiusculâ formante, areâ supernè serratâ, costatâ, costis nigris, crenulatis, margine ventrali bysso latissimè hiante; fuscâ, epidermide cristatâ ad extremitatem posticam indutâ; umbonibus parvis, remotissimis, plerumque decorticatis; ligamenti areâ maximâ, planâ, umbones versus inclinatâ, lineis fuscis obliquis parallelis undiquè pictâ; rhombo ligamentario grandi, corio fusco induto, anticè adjecto, sulcis nunc plurimis, nunc perpaucis.*

THE ANGULATED ARK. Shell diamond-shaped, flatly compressed, sides sharply angled, anterior side acuminated, posterior forming a rather wide area, area serrated along the upper edge, ribbed, ribs black, crenulated, ventral margin very widely gaping for the passage of the byssus; brown, covered at the posterior end with a thick laminated tuft of epidermis; umbones small, very remote, generally decorticated; area of the ligament very wide, flat, inclined towards the umbones, everywhere painted with oblique brown parallel lines; ligamentary space large, covered with a brown cuticle, situated on the anterior portion of the area, grooves sometimes many in number, sometimes very few.

KING, Zool. Journal, vol. v. p. 336.

Hab. Cumberland Bay, Juan Fernandez (found attached to a branch of coral at the depth of eighty fathoms); King.

The ligamentary area of this extraordinary species is composed of two inclined planes gently descending on each side from their line of union in the centre, and it constitutes at least two-thirds of the entire shell, which, (as Captain King significantly expresses it) has very much the appearance of a flat Indian canoe.

Species 85. (Mus. Cuming.)

ARCA MUTABILIS. *Arca testâ oblongâ, lateribus infernè angulatis, antico breviore, infrà rotundato, postico longiusculo, angulato, carinâ ab umbone ad marginem decurrente, margine ventrali bysso hiante; pallidè fuscâ, epidermide lamellatâ prope marginem indutâ; radiatim striatâ, striis elevatis, fortiter granulosis, areâ posticâ nigricostatâ; umbonibus subapproximatis; ligamenti areâ latiusculâ, concavâ, sulcis ligamentariis perpaucis, anticis.*

THE CHANGEABLE ARK. Shell oblong, sides angulated at the lower part, anterior side the shorter, rounded beneath, posterior rather long, angulated, with a keel running down from the umbone to the margin, ventral margin gaping for the passage of the byssus; pale brown, covered near the margin with a lamellated epidermis; radiately striated, striæ raised, strongly granulated, posterior area ornamented with black ribs; umbones somewhat approximated; area of the ligament rather broad, concave, ligamentary grooves very few in number, anterior.

Byssoarca mutabilis, Sowerby, Pro. Zool. Soc., 1833.

Hab. Isle of Plata, West Columbia (found under stones): Cuming.

The dark ribs on the posterior area of this shell constitute one of its most prominent specific features.

Species 86. (Mus. Stainforth.)

ARCA TORTUOSA. *Arca testâ elongato-tortuosâ, parallelopipedâ formante, inæquivalvi, latere antico supernè acuminato, infrà rotundato, postico angulato, latissimè alato-expanso, obliquè carinato, carinâ serratâ, ab umbone ad marginem decurrente; albâ, carneo-fuscescente, pallidè tinctâ; radiatim striatâ, striis elevatis, areæ valvæ sinistralis subobsoletis; umbonibus minutis, approximatis; ligamenti areâ longissimâ, angustissimâ, declivi.*

THE TWISTED ARK. Shell elongately twisted, forming a parallelopiped, inequivalve, anterior side acuminated at the upper part, rounded beneath, posterior angulated, very widely wing-like expanded, obliquely

keeled, keel serrated, running down from the umbone to the margin; white, faintly stained with pinkish brown; radiately striated, striæ raised, those of the area of the left valve nearly obsolete; umbones minute, approximated; area of the ligament very long, very narrow, bent inwards.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3305.

Hab. Singapore and Malacca (found in coarse sand and gravel at the depth of from seven to ten fathoms); Cuming.

This shell cannot fail to be recognised by the extraordinary manner in which it is twisted on its cardinal axis.

Species 87. (Mus. Cuming.)

ARCA CUNEATA. *Arca testâ elongato-oblongâ, lateribus supernè angulatis, antico brevi, rotundato, postico elongato, angulato, carinâ ab umbone ad marginem decurrente, margine ventrali bysso hiante; pallidè fuscâ, epidermide molli lamellatâ indutâ; radiatim striatâ, striis elevatis, fortiter granulosis, areâ posticâ subindistinctè nigricostatâ; umbonibus subapproximatis, ligamenti areâ latiusculâ, concavâ, sulcis ligamentariis anticis posticisque, subdistantibus.*

THE WEDGE-LIKE ARK. Shell elongately oblong, sides angulated at the upper part, anterior side short, rounded, posterior elongated, angulated, with a keel running down from the umbone to the margin, ventral margin gaping for the passage of the byssus; pale brown, covered with a soft thickly laminated epidermis; radiately striated, striæ raised, strongly granulated, posterior area rather indistinctly marked with blackish ribs; umbones somewhat approximated; area of the ligament rather broad, concave, ligamentary grooves both anterior and posterior to the umbones, rather distant from each other.

REEVE, Pro. Zool. Soc., 1844.

Hab. Zanzibar (found under stones at low water); Thorn.

The sculpture of this species corresponds precisely to that of the *Arca mutabilis*; the form of the shell is more depressly elongated, the anterior side is shorter, and there are ligamentary grooves on the posterior part of the cardinal area as well as on the anterior.

Species 88. (Mus. Cuming.)

ARCA ALTERNATA. *Arca testâ oblongâ, subcylindraceâ, medio coarctatâ, anticè valdè attenuatâ, lateribus supernè obtuso-angulatis, latere antico parvo, brevissimo, postico elongato, costis duabus validis ab umbone ad marginem decurrentibus, margine ventrali bysso paululùm hiante; luteo-fuscescente, epidermide peculiariter cristatâ, sparsim indutâ; radiatim costatâ, costis medianis planiusculis, lævibus, creberrimis, sulco medio divisis, costis anticis posticisque validis, crenulatis et striatis, interstitiis profundè sulcatis; umbonibus subapproximatis; ligamenti areâ posticè lanceolato-acuminatâ.*

THE INTERLOCKING ARK. Shell oblong, somewhat cylindrical, contracted in the middle, very much attenuated at the anterior end, sides obtusely angled at the upper part, anterior side small, very short, posterior elongated, with two strong ribs running down from the umbone to the margin, ventral margin a little gaping for the passage of the byssus; yellowish brown, sparingly covered with a peculiarly tufted epidermis; radiately ribbed, middle ribs flat, smooth, very close-set, divided down the centre by a groove, anterior and posterior ribs very strong, crenulated and striated, interstices deeply grooved; umbones somewhat approximated; area of the ligament posteriorly lanceolately acuminated.

Byssoarca alternata, Sowerby, Pro. Zool. Soc., 1833.

Hab. West Columbia (found attached to stones, on a rocky bottom, at the depth of twelve fathoms); Cuming.

This is altogether a very curious and interesting species; the ribs at each end of the shell have a remarkably characteristic appearance, and the epidermis, which is disposed in minute isolated tufts, is of quite a novel structure.

Species 89. (Mus. Cuming.)

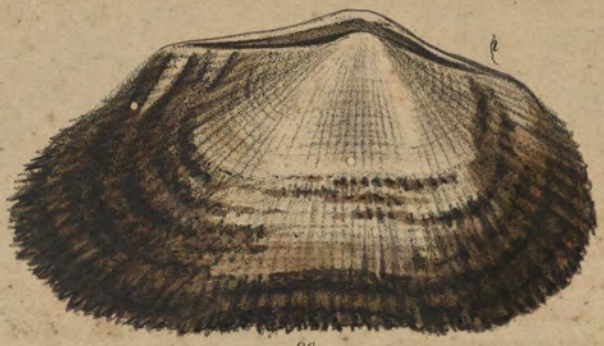
ARCA SEMITORTA. *Arca testâ elliptico-oblongâ, semitortâ, inæquivalvi, lateribus rotundatis, antico valdè breviore; albidâ, fuscescente pallidissimè tinctâ, epidermide crassâ molli indutâ; radiatim striatâ, striis elevatis, striis longitudinalibus minutis, subtilissimè cancellatis; umbonibus approximatis, depresso-incurvis; ligamenti areâ elongatâ, angustissimâ, declivi; intus croceo pallidè tinctâ.*

THE HALF-TWISTED ARK. Shell elliptically oblong, half-twisted, inequivalve, sides rounded, anterior side much the shorter; whitish, very faintly stained with light brown, covered with a thick soft epidermis; radiately striated, striæ raised, very finely cancellated with longitudinal striæ; umbones approximated, depressly incurved; area of the ligament long, very narrow, bent inwards; interior faintly stained with yellow.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 460.

Hab. San Nicolas, island of Zebu, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

This is a shell of much more solid growth than the *Arca tortuosa*; it turns upon its cardinal axis in the same direction as that species, but (as its name significantly implies) it is twisted to only one half the extent.



90

91

92

93

94

95

96

ARCA.

PLATE XIV.

Species 90. (Mus. Cuming.)

ARCA HELBLINGII. *Arca testâ ovatâ, plus minusve compressâ, lateribus rotundatis, postico supernè obliquè angalato, antico obtusè angulato, margine ventrali bysso subirregulariter hiante; albâ, epidermide squamosâ versus marginem indutâ; radiatim striatâ, striis elevatis, granulosis, alternis minoribus, striis posticis duplicatis; umbonibus parvis; ligamenti aream subangustâ, profundè declivi.*

HELBLING'S ARK. Shell ovate, more or less flatly compressed, sides rounded, posterior obliquely angulated at the upper part, anterior obtusely angulated, ventral margin rather irregularly gaping for the passage of the byssus; white, covered towards the margin with a scaly epidermis; radiately striated, striæ raised, granulated, alternate striæ smaller, posterior striæ double; umbones small; area of the ligament rather narrow, deeply bent inwards.

BRUGUIÈRE, Enc. Méth. vers, vol. i. p. 99.

Arca candida Helblingii, Chemnitz.

Hab. St. Elena and Monte Christi, West Columbia, and island of Corrigidor, Philippines (found under stones at low water); Cuming.

This species was dedicated by Chemnitz to Professor Helbling, a celebrated naturalist of the last century living at Mantua.

Species 91. (Mus. Cuming.)

ARCA TENELLA. *Arca testâ subcylindraceo-oblongâ, Modiolæformi, tenui, subpellucidâ, lateribus obtuso-rotundatis, margine ventrali vix hiante; pallidè fuscescente, epidermide molli leviter indutâ; radiatim subtilissimè striatâ, striis granulosis; umbonibus obtusis, anticè incurvis; ligamenti aream anticè latiusculâ, posticè lanceolato-acuminatâ.*

THE DELICATE ARK. Shell somewhat cylindrically oblong, Modiola-shaped, thin, rather transparent, sides obtusely rounded, ventral margin very slightly gaping for the passage of the byssus; pale light brown, slightly covered with a soft epidermis; very finely radiately striated, striæ granulous; umbones obtuse, incurved anteriorly; area of the ligament rather broad at the anterior end, lanceolately acuminated posteriorly.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

A delicate light brown shell, beautifully striated, with a soft scattered epidermis.

Species 92. (Mus. Cuming.)

ARCA GRADATA. *Arca testâ oblongâ, latere antico rotundato, postico angulato, margine ventrali vix hiante; albidâ, epidermide nullâ; radiatim costatâ, costis angustis, numerosis, creberrimis, fortibus, nodulosogranulatis, granulis prominentibus, gradibus concentricis descendentibus formantibus, costis posticis versus marginem duplicatis; umbonibus subapproximatis; ligamenti aream anticè latiusculâ, posticè lanceolato-acuminatâ.*

THE STEP-BUILT ARK. Shell oblong, anterior side rounded, posterior angulated, ventral margin scarcely gaping; whitish, no epidermis; radiately ribbed, ribs narrow, numerous, close-set, strong, nodulously granulated, granules prominent, forming descending concentric steps, posterior ribs double towards the margin; umbones somewhat approximated; area of the ligament rather wide at the anterior end, lanceolately acuminated at the posterior.

BRODERIP AND SOWERBY, Zool. Journal, vol. iv. p. 365.

Hab. St. Elena, West Columbia (found attached to stones); Cuming.

The sculpture of this shell stands out in such prominent relief, that it has the appearance of Chinese carving.

Species 93. (Mus. Cuming.)

ARCA LACERATA. *Arca testâ subquadrato-oblongâ, planiusculo-compressâ, anticè brevi, posticè alato-expansâ, lateribus obtuso-rotundatis, margine ventrali bysso vix hiante; rubido-fuscâ; epidermide fuscâ squamosâ, setarumque seriebus radiantibus, posterioribus fortioribus, indutâ; radiatim striatâ, striis leviter elevatis, granulosis; umbonibus subapproximatis, anticè adjectis; ligamenti aream angustâ, declivi.*

THE RAGGED ARK. Shell somewhat squarely oblong, rather flatly compressed, short anteriorly, wing-like expanded posteriorly, sides obtusely rounded, ventral margin but slightly gaping for the passage of the byssus; reddish brown; covered with a scaly epidermis and a number of radiating rows of bristles, the posterior of which are the strongest; radiately striated, striæ slightly raised, granulated;

umbones rather approximated, situated anteriorly; area of the ligament narrow, bent inwards.

LINNÆUS, Mus. Tessinianum, p. 116. pl. 16. f. 1.

Hab. Island of Mindoro, Philippines (found under stones at low water); Cuming.

This shell may be known by the radiating rows of scales and bristles of the epidermis, which are remarkably strongly developed on the posterior side. The teeth in this species are not set in a straight line, but describe a curve indicating an approach to the hinge of *Pectunculus*.

Species 94. (Mus. Cuming.)

ARCA SETIGERA. *Arca testâ subquadrato-oblongâ, lateribus rotundatis, postico latiore, margine ventrali bysso vix hiante; rubido-fuscâ, epidermide fuscâ setigerâ indutâ; radiatim subtilissimè striatâ, striis elevatis, granulosis; umbonibus subapproximatis, anticè adjectis; ligamenti aream angustâ, declivi.*

THE BRISTLY ARK. Shell rather squarely oblong, sides rounded, posterior wider, ventral margin gaping for the passage of the byssus; reddish brown, covered with a brown bristly epidermis; very finely radiately striated, striæ raised, granulous; umbones rather approximated, situated anteriorly; area of the ligament narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. Zanzibar (found under stones at low water); Thorn.

This species approaches very closely to the preceding; it appears, however, to be of an uniform smaller size, the posterior side is less expanded, and the bristles are set in single rows.

Species 95. (Mus. Cuming.)

ARCA LURIDA. *Arca testâ obliquè oblongâ, latere antico attenuato-rotundato, postico obliquè truncato, margine ventrali bysso hiante; fuscâ, rufescente tinctâ, epidermide fuscâ, sparsim setosâ, indutâ; radiatim striatâ, striis granulosis; umbonibus subapproximatis; ligamenti aream angustâ.*

THE LURID ARK. Shell obliquely oblong, anterior side attenuately rounded, posterior obliquely truncated, ventral margin gaping for the passage of the byssus; brown, stained with light red, covered with a brown sparingly bristled epidermis; radiately striated, striæ granulous; umbones somewhat approximated; area of the ligament narrow.

Byssoarca lurida, Sowerby, Pro. Zool. Soc., 1833.

Hab. St. Elena, West Columbia (found attached to stones in rocky ground at the depth of twelve fathoms); Cuming.

The *Arca lurida* may be distinguished from the *Arca setigera* by its more oblique form, whilst it is of a more reddish stained brown colour and has fewer radiating rows of bristles.

Species 96. (Mus. Cuming.)

ARCA NIVEA. *Arca testâ subquadrato-oblongâ, gibbosâ, lateribus supernè attenuatis, antico rotundato, postico obtuso-angulato, margine ventrali bysso hiante; niveâ, radiatim striatâ, striis elevatis, prominentibus, epidermide crassâ squamosâ versus marginem indutâ; umbonibus majusculis, anticis; ligamenti aream latiusculâ, profundè declivi.*

THE SNOW-WHITE ARK. Shell somewhat squarely oblong, gibbous, side attenuated towards the upper part, anterior rounded, posterior obtusely angulated, ventral margin gaping for the passage of the byssus; snow-white, radiately striated, striæ raised, prominent, covered towards the margin with a thick scaly epidermis; umbones rather large, anterior; area of the ligament rather broad, deeply bent inwards.

CHEMNITZ, Conch. Cab., vol. vii. pl. 54. f. 538.

Arca ovata, Gmelin, Lamarck.

Hab. Zanzibar.

This is not a local variety of the *Arca Helblingii*, as M. Deshayes has been inclined to suppose; the umbones in that species are much more central and the valves more flatly compressed.

97.

98 a

98 b

99

100 a

100 b

101

102 a

102 b

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

103

Sowerby del. et lith.

prd. lith. Tinn. imp.

ARÇA.

PLATE XV.

Species 97. (Mus. Cuming.)

ARCA VIRESCENS. *Arca testâ elongatâ, lateribus rotundatis, postico leviter angulato, antico subattenuato; viridescente, epidermide tenui, ad aream posticam setosâ, indutâ; striis elevatis radiatâ; ligamenti aream angustissimâ, umbonibus approximatis.*

THE VERDANT ARK. Shell elongated, sides rounded, posterior side slightly angulated; greenish, covered with a thin epidermis, bristly upon the posterior area; radiated with elevated striæ; area of the ligament very narrow, umbones approximated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Catbalonga, island of Samar, Philippines (found under stones at low water); Cuming.

A delicate greenish species, in which the epidermis lies on the posterior area in rows of fine bristles.

Species 98. (Fig. *a* and *b*, Mus. Metcalfe.)

ARCA BRITANNICA. *Arca testâ obliquè trapeziformi, lateribus supernè angulatis, latere antico brevissimo, attenuato, postico obliquè angulato, infernè acuminato, carinâ prominente ab umbone ad marginem decurrente; fuscescente; striis longitudinalibus et transversis decussatâ; ligamenti areâ latiusculâ, umbonibus incurvatis.*

THE BRITISH ARK. Shell obliquely trapeziform, sides angulated at the upper part, anterior very short, attenuated, posterior obliquely angulated, acuminated at the lower part, with a prominent keel running from the umbone to the acumination; light brown; decussated with transverse and longitudinal striæ; area of the ligament rather broad, umbones curved inwards.

Arca tetragona, Auct. Brit.

Hab. Britain (coast of Devonshire, &c.).

I introduce this species of *Arca* with a new name, in order to distinguish it from the Mediterranean *Arca tetragona*, with which it appears to have been confounded.

Species 99. (Mus. Cuming.)

ARCA FASCIATA. *Arca testâ oblongâ, tenui, compressâ, lateribus rotundatis, supernè attenuatis; albidâ, fasciis cinereo-purpurascentibus indistinctis concentricè tinctâ; epidermide tenui, posticè setosâ, indutâ; radiatim striatâ, striis elevatis, irregularibus, striis transversis subtilissimis fimbriato-decussatis; ligamenti areâ angustâ, profundè declivi; intus purpurascente.*

THE BANDED ARK. Shell oblong, thin, compressed, sides rounded, attenuated towards the upper part; whitish, concentrically stained with indistinct bands of ashy purple, covered with a thin epidermis, bristly at the posterior end; radiately striated, striæ raised, irregular, fimbriately crossed by very fine transverse striæ; area of the ligament narrow, deeply bent inwards; interior stained with purple.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This is a remarkably flattened shell, banded and stained with reddish and ashy purple both inside and outside.

Species 100. (Fig. *a* and *b*, Mus. Cuming.)

ARCA TETRAGONA. *Arca testâ elongato-quadratâ, lateribus supernè angulatis, latere antico infra rotundato, postico acutè angulato, carinâ acutâ ab umbone ad marginem decurrente; albidâ, rubido fuscescente tinctâ; radiatim striatâ, striis elevatis, subtilissimè crenulatis, rubido-fuscescentibus; umbonibus leviter incurvatis; ligamenti areâ latâ, rubido-fusco obliquè lineatâ.*

THE QUADRANGULAR ARK. Shell elongately square, sides angulated at the upper part, anterior side rounded beneath, posterior sharply angulated, with a sharp keel running down from the umbone to the margin; whitish, stained with reddish brown; radiately striated, striæ raised, very finely crenulated, reddish brown; umbones slightly incurved; area of the ligament broad, obliquely lineated with reddish brown.

POLI, Testacea, vol. ii. pl. 25. f. 12 and 13.

Hab. Mediterranean.

The British species, which I have distinguished by the title of *Arca Britannica*, has been hitherto confounded with the *Arca tetragona* of the Mediterranean; it differs, however, materially by its peculiarly oblique trapeziform growth.

Species 101. (Mus. Cuming.)

ARCA LIMA. *Arca testâ elongato-ovatâ, lateribus supernè angulatis, antico infra rotundato, postico angulato-rotundato, subextenso; fuscescente, fusco tinctâ, posticè fusco maculatâ, epidermide tenui subtilissimè setosâ indutâ, radiatim liratâ, liris angustis, numerosis, confertis, granosis, perpaucis medianis duplicatis; lateraliter costatâ, costis rudibus, subdistantibus, crenato-nodosis; ligamenti areâ angustâ.*

THE FILE ARK. Shell elongately ovate, sides angulated at the upper part, anterior rounded beneath, posterior angularly rounded, somewhat extended; light brown, stained with brown, spotted with brown, posteriorly covered with a thin, very fine bristly epidermis; radiately ridged, ridges narrow, numerous, close-set, granulated, a few ribs towards the middle duplicate, ribbed laterally, ribs rude, rather distant, crenately knobbed; area of the ligament narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Burias and Corrigidor, Philippines (found under stones at low water); Cuming.

The sculpture of this shell is very similar to that of the *Arca bullata*; it is, however, of much finer character, although the shell is more elongated and altogether larger.

Species 102. (Mus. Cuming.)

ARCA OCELLATA. *Arca testâ elongato-quadratâ, lateribus supernè angulatis, latere antico brevissimo, infra rotundato, postico elongato, infra acuminato, margine ventrali bysso latissimè hiante; albidâ, epidermide tenui, subsetosâ, indutâ; radiatim striatâ, striis subtilissimè crenulatis; umbonibus remotis; ligamenti areâ latissimâ, rhombo ligamentario peculiariter ocellato.*

THE EYED ARK. Shell elongately square, sides angulated at the upper part, anterior side very short, rounded beneath, posterior elongated, acuminated beneath, ventral margin very widely gaping for the passage of the byssus; whitish, covered with a thin, rather bristly epidermis; radiately striated, striæ very finely crenulated; umbones remote; area of the ligament very wide, diamond-shaped, ligamentary space ocellated.

REEVE, Pro. Zool. Soc., 1843.

Hab. Singapore (found in sandy mud at the depth of seven fathoms); Cuming.

This interesting little species exhibits a character which unfortunately is not very correctly represented in the accompanying figure. The dark ligamentary space between the umbones is marked with a pair of oblique white oval spots, one on each valve.

Species 103. (Mus. Cuming.)

ARCA TRAPEZINA. *Arca testâ obliquè ovatâ, subtrapeziformi, depressiusculâ, lateribus supernè angulatis, antico infra rotundato, postico angulato-rotundato; albidâ, fuscescente tinctâ, epidermide fuscâ, posticè setosâ, indutâ; radiatim liratâ, liris granosis; umbonibus anticè adjectis; ligamenti areâ angustâ.*

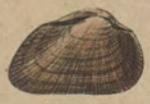
THE TRAPEZIFORM ARK. Shell obliquely ovate, somewhat trapeziform, rather depressed, sides angulated at the upper part, anterior side rounded beneath, posterior angularly rounded; whitish, stained with light brown, covered with a brown, posteriorly bristled epidermis; radiately ridged, ridges grained; umbones situated anteriorly; area of the ligament narrow.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 467.

Hab. Batangus, island of Luzon (found under stones at low water); Cuming.

This is not a variety of the *Arca Helblingii*, as M. Deshayes has been inclined to suppose; the umbones are situated more anteriorly, and there is a difference in the style and pattern of the sculpture.

104



105

106

107

108

109

110

111

112

113

Sowerby del et lith.

prel: lith: linn: imp.

ARCA.

PLATE XVI.

Species 104. (Mus. Hankey.)

ARCA DONACIFORMIS. *Arca testâ sub-Donaciformi, medio leviter coarctatâ, latere antico brevissimo, truncato, postico elongato, subacuminato; albidâ, epidermide vix nullâ, striis transversis et longitudinalibus elevatis fimbriato-decussatâ; ligamenti areâ anticè latiusculâ, posticè acuminatâ; ligamento brevi, ad posticam areæ partem solum adjuncto.*

THE DONAX-SHAPED ARK. Shell somewhat Donax-shaped, slightly contracted in the middle, anterior side very short, truncated, posterior elongated, rather acuminated; whitish, with scarcely any epidermis, fimbriately decussated with raised transverse and longitudinal striæ; area of the ligament rather broad anteriorly, acuminated posteriorly; ligament short, situated at the posterior portion of the area only.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mozambique Channel (found imbedded in madrepore); Hankey.

The ligament and ligamentary area of this species present exactly the same peculiar structure as those of the *Arca pusilla* (Pl. XVIII.); the shell is, however, altogether larger, more acuminated posteriorly, and the sculpture is of a smaller pattern.

Species 105. (Mus. Cuming.)

ARCA TENEBRICA. *Arca testâ oblongo-ovatâ, lateribus angulato-rotundatis; fuscâ, epidermide tenui indutâ; radiatim striatâ, striis elevatis, numerosis, confertis; umbonibus albidis, approximatis, anticè adjectis; ligamenti areâ angustâ, posticè lanceolato-acuminatâ.*

THE DARK ARK. Shell oblong-ovate, sides angularly rounded; brown, covered with a thin epidermis; radiately striated, striæ raised, numerous, close-set; umbones white, approximated, situated anteriorly; area of the ligament narrow, lanceolately acuminated posteriorly.

REEVE, Pro. Zool. Soc., 1844.

Hab. Basey, island of Samar, Philippines (found under stones at low water); Cuming.

The umbones in this species are very anteriorly situated.

Species 106. (Mus. Cuming.)

ARCA SOLIDA. *Arca testâ ovato-quadratâ, subæquilaterali, crassâ, solidâ, gibbosissimâ, lateribus rotundatis, postico obtusè angulato, obsoletè carinato; albidâ, epidermide vix nullâ; radiatim striatâ, striis elevatis, striis longitudinalibus minutis subindistinctè et irregulariter cancellatis; umbonibus centralibus; ligamenti areâ elongatâ, subdeclivi; ligamento rhomboideo, centrali.*

THE SOLID ARK. Shell ovately square, nearly equilateral, thick, solid, very gibbous, sides rounded, the posterior obtusely angulated, obsoletely keeled; whitish, with scarcely any epidermis; radiately striated, striæ elevated, rather indistinctly and irregularly cancellated with minute longitudinal striæ; umbones central; area of the ligament elongated, somewhat bent inwards; ligament diamond-shaped, central.

Byssoarca solida, Sowerby, Pro. Zool. Soc., 1844.

Hab. Payta, coast of Peru (found under stones); Cuming.

This species may be recognised by its extremely gibbous growth.

Species 107. (Mus. Cuming.)

ARCA BULLATA. *Arca testâ ovato-quadratâ, planiusculo-compressâ, lateribus supernè angulatis, antico infra rotundato, postico angulato-extenso; fuscescente, epidermide tenui, subsetosâ, setis in liris longitudinalibus adjectis, indutâ; radiatim costatâ, costis nodosis, costis lateralibus grandibus, distantibus, crenato-nodosis; ligamenti areâ angustâ, elongatâ, declivi.*

THE STUDDED ARK. Shell ovately square, rather flatly compressed, sides angulated at the upper part, anterior rounded beneath, posterior angularly extended; light brown, covered with a thin, rather bristly epidermis, bristles lying in longitudinal ridges; radiately ribbed, ribs nodulous, side ribs large, distant, crenately noduled; area of the ligament narrow, elongated, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The nodules of the radiating ribs are arranged in longitudinal rows with so much regularity, that the shell has all the appearance of being cancellated, the effect of which is increased by the bristles of the epidermis being deposited only between the nodules.

Species 108. (Mus. Cuming.)

ARCA DIVARICATA. *Arca testâ ovato-oblongâ, latere antico supernè subangulato, postico rotundato, subconcavo-compresso, carinâ ab umbone ad marginem decurrente; albâ, epidermide vix nullâ; longitudi-*

naliter fimbriato-costatâ, interstitiis profundè sulcatis, liris elevatis angustis decussatis; costis carinam super fimbriato-spinosis, ad aream posticam concavam divaricatim radiatis; ligamenti areâ angustâ, posticè lanceolatâ.

The DIVARICATED ARK. Shell ovately oblong, anterior side rather angulated at the upper part, posterior rounded, somewhat concavely compressed, with a keel running down from the umbone to the margin; white, with scarcely any epidermis; longitudinally fimbriately ribbed, interstices deeply grooved, crossed with narrow raised ridges; ribs fimbriately spinous on passing over the keel, divaricately rayed across the concave posterior area; area of the ligament narrow, lanceolated posteriorly.

Byssoarca divaricata, Sowerby.

Hab. Island of Annaa (Chain Island), Pacific Ocean (found attached to stones); Cuming.

This very pretty species is most characteristically distinguished by the divaricated course of the ribs over the posterior area.

Species 109. (Mus. Cuming.)

ARCA VOLUCRIS. *Arca testâ subquadratâ, gibbosâ, naviculari, lateribus superne angulatis, antico infra rotundato, postico angulato, carinâ acutâ ab umbone ad marginem decurrente; albidâ, fusco sparsim tinctâ; striis elevatis longitudinalibus et transversis decussatâ, areâ posticali costatâ, costis latiusculis, crenatis; umbonibus mucronatis, incurvatis; ligamenti areâ latissimâ, nigro unimaculatâ.*

The FLYING-BIRD ARK. Shell somewhat square, gibbous, boat-shaped, sides angulated at the upper part, anterior rounded beneath, posterior angulated, with a sharp keel running down from the umbone to the margin; whitish, sparingly tinged with brown; decussated with transverse and longitudinal raised striæ; posterior area ribbed, ribs rather broad, crenated; umbones pointed, curved inwards; area of the ligament very broad, marked with a dark blotch.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

This species belongs to that division of the genus of which the *Arca Noæ* is the type, and is nearest allied to the *Arca imbricata*.

Species 110. (Mus. Cuming.)

ARCA CŒLATA. *Arca testâ ovato quadratâ, subcompressâ, latere antico brevissimo, rotundato, postico angulato, margine ventrali bysso hiante; albâ; radiatim costatâ, costis liris angustis elevatis eleganter clathratis, interstitiis profundè excavatis, costis medianis duplicatis, lateralibus confertim nodulosis; umbonibus anticè adjectis; ligamenti areâ angustâ, profundè declivi.*

The EMBOSSED ARK. Shell ovately quadrate, rather compressed, anterior side very short, rounded, posterior angulated, ventral margin gaping for the passage of the byssus; white; radiately ribbed, ribs elegantly latticed with narrow raised ridges, interstices deeply excavated, middle ribs duplicate, side ribs closely noduled; umbones situated anteriorly; area of the ligament narrow, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The sculpture of this shell is of the most exquisite description, and reminds one forcibly of the delicate embossed carving of the Chinese.

Species 111. (Mus. Cuming.)

ARCA COMETA. *Arca testâ elongatâ, latere antico brevissimo, attenuato, rotundato, postico longissimo, plano-angulato; albidâ; radiatim striatâ, striis elevatis, posticis latioribus, prominentibus, distantioribus, subsquamosis; umbonibus anticè adjectis; ligamenti areâ angustâ.*

The COMET ARK. Shell elongated, anterior side very short, attenuated, rounded, posterior very long, flatly angulated; whitish; radiately striated, striæ raised, posterior striæ wider, prominent, more distant, a little scaly; umbones situated anteriorly; area of the ligament narrow.

REEVE, Pro. Zool. Soc., 1844.

Hab. Sorsogon, island of Luzon, Philippines; Cuming.

The posterior striæ acquire almost the importance of ribs.

For Species 112 (*Arca pusilla*), see Plate XVIII., the shell here figured being merely a somewhat distorted specimen of the *Arca divaricata*.

Species 113. (Mus. Cuming.)

ARCA OLIVACEA. *Arca testâ ovato-quadratâ, tenuiculâ, subæquilaterali, lateribus rotundatis; albidâ, epidermide olivaceo-fuscâ tenui corneâ indutâ; subtilissimè radiatim striatâ, striis numerosis, confertis; ligamenti areâ mediocri, umbonibus subcentralibus.*

The OLIVE-COLOURED ARK. Shell ovately square, rather thin, nearly equilateral, sides rounded; whitish, covered with a thin, horny, olive-brown epidermis; very finely radiately striated, striæ numerous, close-set; area of the ligament middling, umbones nearly central.

REEVE, Pro. Zool. Soc., 1844.

Hab. San Nicolas, island of Zebu (found in sandy mud at the depth of four fathoms); Cuming.

This shell is not much unlike the *Arca lactea* in general appearance; it will be found, however, on examination to be a much thinner and more delicate shell, whilst the umbones are sharper and more closely approximated.

LIBRARY
OF THE
BOMBAY
BRANCH
OF THE
ROYAL ASIATIC SOCIETY

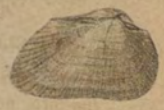
112

114

113

116

117



118

119

120

121

122

ARCA.

PLATE XVII.

(Figures moderately magnified.)

Species 112. (Mus. Cuming.)

ARCA MINUTA. *Arca testâ orbiculari-ovatâ, subæquivalvi, lateribus supernè angulatis, infra rotundatis; albidâ, subpellucidâ, epidermide tenui molli indutâ; radiatim striatâ; ligamenti aream latiusculâ, ligamento parvo, centrali.*

THE MINUTE ARK. Shell orbicularly ovate, nearly equivalve, sides angular, rounded beneath; whitish, somewhat transparent, covered with a thin soft epidermis; radiately striated; area of the ligament rather wide, ligament small, central.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands (found in coarse sand at the depth of six fathoms); Cuming.

A very minute species, which cannot be referred to any hitherto described.

Species 114. (Mus. Cuming.)

ARCA NAVICELLA. *Arca testâ quadrato-elongatâ, subcompressâ, lateribus supernè angulatis, antico infra rotundato, postico angulato, carinâ ab umbone ad marginem decurrente; radiatim striatâ; albidâ, fusco posticè sparsim strigatâ; ligamenti aream elongatâ.*

THE LITTLE SHIP ARK. Shell squarely elongated, somewhat compressed, sides angulated at the upper part, anterior rounded beneath, posterior angulated, with a keel running from the umbone to the margin; radiately striated; whitish, sparingly streaked at the posterior end with brown; area of the ligament elongated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Calipan, island of Mindoro, Philippines (found in coarse sand at the depth of ten fathoms); Cuming.

This is a little species of the *Arca Noæ* or naviform group.

Species 115. (Mus. Cuming.)

ARCA LATERALIS. *Arca testâ obliquè trapeziformi, lateribus supernè angulatis, antico brevissimo, postico latissimo, obliquè expanso; radiatim costatâ, costis numerosis, angustis, crenatis, epidermide subpilosâ indutâ; ligamenti aream parvâ.*

THE ONE-SIDED ARK. Shell obliquely trapeziform, sides angulated at the upper part, anterior very short, posterior very wide, obliquely expanded; radiately ribbed, ribs numerous, narrow, crenated, covered with a somewhat hairy epidermis; area of the ligament small.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

The peculiarly oblique growth of this species renders it extremely interesting. The posterior side of the shell is radiated with lines of fine dark hair rising from between the crenulations of about every third rib.

Species 116. (Mus. Metcalfe.)

ARCA LACTEA. *Arca testâ subquadrato-ovali, lateribus supernè angulatis, antico infra obtuso-rotundato, postico angulato-rotundato; albidâ, epidermide fuscescente indutâ; radiatim striatâ, striis elevatis, subtilissimè crenulatis.*

THE MILK-WHITE ARK. Shell somewhat squarely oval, sides angulated at the upper part, anterior obtusely rounded beneath, posterior angularly rounded; whitish, covered with a light brown epidermis; radiately striated, striæ raised, very finely crenulated.

LINNÆUS, Syst. Nat., p. 1141.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 467.

Arca modiolus, Poli.

Arcæ Quoyi and *Gaimardi*? Payrandeau.

Hab. Mediterranean.

This species appears to have been described originally from some specimens that had become bleached on the shore, as it is not particularly white.

Species 117. (Mus. Cuming.)

ARCA SYMMETRICA. *Arca testâ subquadratâ, gibbosâ, lateribus supernè acutè angulatis, antico infra rotundato, postico angulato; viridescente; striis longitudinalibus et radiantibus crenulato-decussatâ; ligamenti aream latiusculâ, ligamento parvo, centrali.*

THE SYMMETRICAL ARK. Shell somewhat square, gibbous, sides sharply angulated at the upper part, anterior rounded beneath, posterior angulated; greenish; crenulately decussated with longitudinal and radiating striæ; area of the ligament rather broad, ligament small, central.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands, bay of Manila; Singapore (found under stones at low water); Cuming.

The ligament of this species occupies only a very small diamond-shaped space between the umbones.

Species 118. (Mus. Cuming.)

ARCA SCULPTILIS. *Arca testâ oblongo-quadratâ, lateribus supernè angulatis, infra obtuso-rotundatis; albâ; striis longitudinalibus et radiantibus elevatis subtilissimè clathratâ; ligamenti aream latiusculâ.*

THE FINELY-CARVED ARK. Shell oblong-square, sides angulated at the upper part, obtusely rounded beneath; white, very finely latticed with raised longitudinal and radiating striæ; area of the ligament rather wide.

REEVE, Pro. Soc. Zool., 1844.

Hab. Baclayon, island of Bohol, Philippines (found in sandy mud at the depth of seventeen fathoms); Cuming.

The engraved sculpture of this shell is of a more prominent character than that of the preceding species.

Species 119. (Mus. Cuming.)

ARCA PARVA. *Arca testâ elongato-oblongâ, lateribus rotundatis, antico brevissimo, pulcherrimè decussato-striatâ, striis radiantibus elevatis, confertis, subtilissimè squamosis; rubido-castaneâ; ligamenti aream subangustâ, anticè adjectâ.*

THE SMALL ARK. Shell elongately oblong, sides rounded, anterior very short, very beautifully decussately striated, radiating striæ raised, close-set, very finely scaled; reddish chestnut; area of the ligament rather narrow, situated anteriorly.

Byssoarca parva, Sowerby, Pro. Zool. Soc., 1833.

Hab. Ducie's island, Pacific Ocean (found in coral rock, and attached to shells); Cuming.

A very delicate neatly sculptured shell.

Species 120. (Mus. Cuming.)

ARCA ZEBUENSIS. *Arca testâ subquadratâ, gibbosâ, lateribus supernè angulatis, infra obliquè rotundatis; fuscescente, epidermide molli indutâ; radiatim subtilissimè striatâ; ligamenti aream latiusculâ, ligamento parvo, centrali.*

THE ZEBU ARK. Shell somewhat square, gibbous, sides angulated at the upper part, obliquely rounded beneath; light brown, covered with a soft epidermis; very finely radiately striated; area of the ligament rather broad, ligament small, central.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Zebu, Philippines (found under stones at low water); Cuming.

The ligament, as in the *Arca symmetrica*, occupies merely a small diamond-shaped space between the umbones.

Species 121. (Mus. Cuming.)

ARCA STRIATA. *Arca testâ subquadrato-oblongâ, lateribus obtusè rotundatis; fuscescente, epidermide molli indutâ; radiatim striatâ, striis elevatis, confertis, posticis distantioribus; ligamenti aream latiusculâ, declivi.*

THE STRIATED ARK. Shell somewhat squarely oblong, sides obtusely rounded; light brown, covered with a soft epidermis; radiately striated, striæ raised, close-set, posterior striæ more distant; area of the ligament rather wide, bent inwards.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This shell approaches very nearly to the *Arca lactea*, but it is yet distinct; the posterior side is longer, it is a more compressed shell, and the posterior striæ are more widely spread.

Species 122. (Mus. Cuming.)

ARCA PULCHELLA. *Arca testâ ovatâ, gibbosâ, lateribus supernè attenuatis, antico brevissimo; albâ; laminis longitudinalibus prominentibus, pulcherrimè fimbriatis, ornatâ; ligamenti aream anticè latiusculâ; umbonibus anticis.*

THE PRETTY ARK. Shell ovate, gibbous, sides attenuated at the upper part, anterior very short; white; ornamented with very beautifully fimbriated, prominent, longitudinal laminæ; area of the ligament rather wide anteriorly; umbones anterior.

REEVE, Pro. Zool. Soc., 1844.

Hab. Algeria.

This species is well distinguished from any yet described by the very beautifully fimbriated longitudinal laminæ.

ARCA.

[*Temporary Index.*]

	Plate	Species
alternata, *Reeve*	XIII.	88
ambigua, *Reeve*	X.	65
Americana, *Gray*	IV.	21
angicostata, *Reeve*	IX.	57
angulata, *King*	XIII.	84
anomala, *Reeve*	II.	9
antiquata, *Linnæus*	IX.	60
auriculata, *Lamarck*	VI.	35
auriculata, Sowerby	X.	63
Aviculoides, *Reeve*	X.	63
barbata, *Linnæus*	XIII.	83
Brasiliana, *Lamarck*	III.	17
brevifrons, *Sowerby*	I.	6
Britannica, *Reeve*	XV.	98
bullata, *Reeve*	XVI.	107
Cardiiformis, Sowerby	III.	17
cælata, *Reeve*	XVI.	110
cepoides, *Reeve*	X.	66
chalcanthum, *Reeve*	VII.	43
cistula, *Reeve*	V.	29
clathrata, *Reeve*	VII.	48
cometa, *Reeve*	XVI.	111
compacta, *Reeve*	V.	27
concinna, *Sowerby*	VI.	34
contraria, *Reeve*	VIII.	55
cornea, *Reeve*	III.	16
crebricostata, *Reeve*	IX.	61
cunealis, *Reeve*	XIII.	87
cuneata, *Reeve*	VI.	37
crenata, *Reeve*	VIII.	51
cymbæformis, *Reeve*	V.	31
decussata, *Reeve*	XII.	81
Deshayesii, *Hanley*	VII.	47
disparilis, *Reeve*	IX.	59
divaricata, *Reeve*	XVI.	108
Donaciformis, *Reeve*	XVI.	104
emarginata, *Sowerby*	IV.	26
fasciata, *Reeve*	XV.	99
ferruginea, *Reeve*	VI.	39
formosa, *Sowerby*	II.	10
fusca, *Bruguière*	XII.	82
Gambiensis, *Reeve*	VI.	36
gibbosa, *Reeve*	IV.	20
globosa, *Reeve*	VIII.	52
gradata, *Broderip*	XIV.	92
grandis, *Broderip*	I.	4
granosa, *Linnæus*	III.	15
gubernaculum, *Reeve*	III.	14
Hankeyana, *Reeve*	X.	58
Helblingii, *Bruguière*	XIV.	90
hians, *Reeve*	IX.	62
holoserica, *Reeve*	II.	11
illota, *Reeve*	XII.	78
imbricata, *Bruguière*	XI.	73
inæquivalvis, *Bruguière*	VIII.	54
incongrua, *Say*	VIII.	50
Indica, *Gmelin*	IX.	56
inflata, *Reeve*	V.	30
Japonica, *Reeve*	V.	32
labiata, *Sowerby*	I.	7
labiosa, *Sowerby*	X.	67
lacerata, *Linnæus*	XIV.	93
lactea, *Linnæus*	XVII.	116
lateralis, *Reeve*	XVII.	115
lima, *Reeve*	XV.	101
Lithodomus, *Reeve*	XII.	76
loricata, *Reeve*	IX.	58
lurida, *Reeve*	XIV.	95
Luzonica, *Reeve*	VII.	44
maculata, *Reeve*	XI.	71
maculosa, *Reeve*	IV.	24
minuta, *Reeve*	XVII.	112
multicostata, *Sowerby*	IV.	23
mutabilis, *Reeve*	XIII.	85
myristica, *Reeve*	VII.	42
navicella, *Reeve*	XVII.	114
navicularis, *Bruguière*	XI.	70
nivea, *Chemnitz*	XIV.	96
Noæ, *Linnæus*	XI.	72
nux, *Sowerby*	I.	1
obesa, *Sowerby*	I.	3
obliqua, *Reeve*	VI.	41
obliquata, *Gray*	XII.	80
obtusa, *Reeve*	XII.	77
occlusa, *Reeve*	X.	64
ocellata, *Reeve*	XV.	102
olivacea, *Reeve*	XVI.	113
ovata, *Reeve*	VIII.	49
Pacifica, *Reeve*	XI.	75
parva, *Reeve*	XVII.	119

ARCA.

	Plate	Species
pertusa, *Reeve*	V.	28
pexata, *Say*	IV.	22
pilula, *Reeve*	II.	8
pulchella, *Reeve*	XVII.	122
quadrilatera, Sowerby	I.	2
radiata, *Reeve*	VI.	40
reversa, *Gray*	I.	5
rhombea, *Born*	II.	12
rotundicostata, *Reeve*	VII.	46
rufescens, *Reeve*	VIII.	53
scapha, *Chemnitz*	IV.	25
sculptilis, *Reeve*	XVII.	118
secticostata, *Reeve*	VI.	38
semitorta, *Lamarck*	XIII.	89
senilis, *Linnæus*	VII.	45
setigera, *Reeve*	XIV.	94
solida, *Reeve*	XVI.	106
striata, *Reeve*	XVII.	121
symmetrica, *Reeve*	XVII.	117
tenebrica, *Reeve*	XVI.	105
tenella, *Reeve*	XIV.	91
tetragona, *Poli*	XV.	100
tortuosa, *Linnæus*	XIII.	86
transversa, *Say*	II.	13
trapezia, *Deshayes* (*lobata*, Reeve)	III.	19
trapezina, *Lamarck*	XV.	103
truncata, *Reeve*	XI.	74
tuberculosa, *Sowerby*	III.	18
umbonata ? Lamarck	XI.	73
velata, *Reeve*	XII.	79
vellicata, *Reeve*	V.	33
ventricosa, Lamarck	XI.	73
virescens, *Reeve*	XV.	97
volucris, *Reeve*	XVI.	109
zebra, *Reeve*	XI.	69
Zebuensis, *Reeve*	XVII.	120

ERRATA.

Species 19.—*Instead of* Arca lobata, *Reeve, read* Arca trapezia, *Deshayes*, Magasin de Zoologie.
Species 87.—*Instead of* Arca cuneata *read* Arca cuncalis.

ARCA.

[*Temporary Index.*]

	Plate	Species
alternata, *Reeve*	XIII.	88
ambigua, *Reeve*	X.	65
Americana, *Gray*	IV.	21
angicostata, *Reeve*	IX.	57
angulata, *King*	XIII.	84
anomala, *Reeve*	II.	9
antiquata, *Linnæus*	IX.	60
auriculata, *Lamarck*	VI.	35
auriculata, Sowerby	X.	63
Aviculoides, *Reeve*	X.	63
barbata, *Linnæus*	XIII.	83
Brasiliana, *Lamarck*	III.	17
brevifrons, *Sowerby*	I.	6
Britannica, *Reeve*	XV.	98
bullata, *Reeve*	XVI.	107
Cardiiformis, Sowerby	III.	17
cælata, *Reeve*	XVI.	110
cepoides, *Reeve*	X.	66
chalcanthum, *Reeve*	VII.	43
cistula, *Reeve*	V.	29
clathrata, *Reeve*	VII.	48
cometa, *Reeve*	XVI.	111
compacta, *Reeve*	V.	27
concinna, *Sowerby*	VI.	34
contraria, *Reeve*	VIII.	55
cornea, *Reeve*	III.	16
crebricostata, *Reeve*	IX.	61
cunealis, *Reeve*	XIII.	87
cuneata, *Reeve*	VI.	37
crenata, *Reeve*	VIII.	51
cymbæformis, *Reeve*	V.	31
decussata, *Reeve*	XII.	81
Deshayesii, *Hanley*	VII.	47
disparilis, *Reeve*	IX.	59
divaricata, *Reeve*	XVI.	108
Donaciformis, *Reeve*	XVI.	104
emarginata, *Sowerby*	IV.	26
fasciata, *Reeve*	XV.	99
ferruginea, *Reeve*	VI.	39
formosa, *Sowerby*	II.	10
fusca, *Bruguière*	XII.	82
Gambiensis, *Reeve*	VI.	36
gibbosa, *Reeve*	IV.	20
globosa, *Reeve*	VIII.	52
gradata, *Broderip*	XIV.	92
grandis, *Broderip*	I.	4
granosa, *Linnæus*	III.	15
gubernaculum, *Reeve*	III.	14
Hankeyana, *Reeve*	X.	58
Helblingii, *Bruguière*	XIV.	90
hians, *Reeve*	IX.	62
holoserica, *Reeve*	II.	11
illota, *Reeve*	XII.	78
imbricata, *Bruguière*	XI.	73
inæquivalvis, *Bruguière*	VIII.	54
incongrua, *Say*	VIII.	50
Indica, *Gmelin*	IX.	56
inflata, *Reeve*	V.	30
Japonica, *Reeve*	V.	32
labiata, *Sowerby*	I.	7
labiosa, *Sowerby*	X.	67
lacerata, *Linnæus*	XIV.	93
lactea, *Linnæus*	XVII.	116
lateralis, *Reeve*	XVII.	115
lima, *Reeve*	XV.	101
Lithodomus, *Reeve*	XII.	76
loricata, *Reeve*	IX.	58
lurida, *Reeve*	XIV.	95
Luzonica, *Reeve*	VII.	44
maculata, *Reeve*	XI.	71
maculosa, *Reeve*	IV.	24
minuta, *Reeve*	XVII.	112
multicostata, *Sowerby*	IV.	23
mutabilis, *Reeve*	XIII.	85
myristica, *Reeve*	VII.	42
navicella, *Reeve*	XVII.	114
navicularis, *Bruguière*	XI.	70
nivea, *Chemnitz*	XIV.	96
Noæ, *Linnæus*	XI.	72
nux, *Sowerby*	I.	1
obesa, *Sowerby*	I.	3
obliqua, *Reeve*	VI.	41
obliquata, *Gray*	XII.	80
obtusa, *Reeve*	XII.	77
occlusa, *Reeve*	X.	64
ocellata, *Reeve*	XV.	102
olivacea, *Reeve*	XVI.	113
ovata, *Reeve*	VIII.	49
Pacifica, *Reeve*	XI.	75
parva, *Reeve*	XVII.	119

	Plate	Species
pertusa, *Reeve*	V.	28
pexata, *Say*	IV.	22
pilula, *Reeve*	II.	8
pulchella, *Reeve*	XVII.	122
quadrilatera, Sowerby	I.	2
radiata, *Reeve*	VI.	40
reversa, *Gray*	I.	5
rhombea, *Born*	II.	12
rotundicostata, *Reeve*	VII.	46
rufescens, *Reeve*	VIII.	53
scapha, *Chemnitz*	IV.	25
sculptilis, *Reeve*	XVII.	118
secticostata, *Reeve*	VI.	38
semitorta, *Lamarck*	XIII.	89
senilis, *Linnæus*	VII.	45
setigera, *Reeve*	XIV.	94
solida, *Reeve*	XVI.	106
striata, *Reeve*	XVII.	121
symmetrica, *Reeve*	XVII.	117
tenebrica, *Reeve*	XVI.	105
tenella, *Reeve*	XIV.	91
tetragona, *Poli*	XV.	100
tortuosa, *Linnæus*	XIII.	86
transversa, *Say*	II.	13
trapezia, *Deshayes* (*lobata*, Reeve)	III.	19
trapezina, *Lamarck*	XV.	103
truncata, *Reeve*	XI.	74
tuberculosa, *Sowerby*	III.	18
umbonata ? Lamarck	XI.	73
velata, *Reeve*	XII.	79
vellicata, *Reeve*	V.	33
ventricosa, Lamarck	XI.	73
virescens, *Reeve*	XV.	97
volucris, *Reeve*	XVI.	109
zebra, *Reeve*	XI.	69
Zebuensis, *Reeve*	XVII.	120

ERRATA.

Species 19.—*Instead of* Arca lobata, *Reeve*, *read* Arca trapezia, *Deshayes*, Magasin de Zoologie.
Species 87.—*Instead of* Arca cuncata *read* Arca cuncalis.

MONOGRAPH

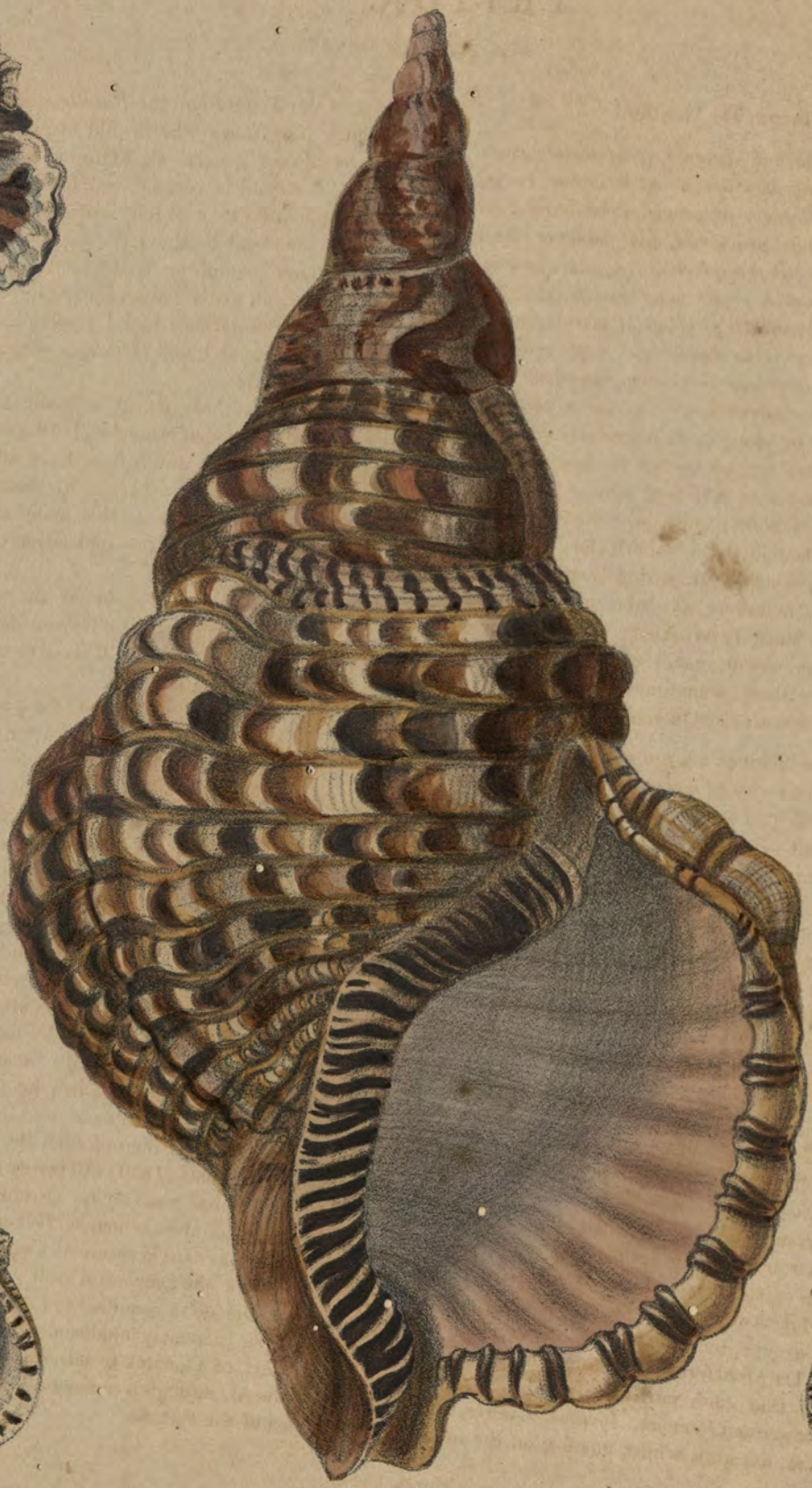
OF THE GENUS

TRITON.

"Understand the same
Of fish, within their watry residence;
Not hither summoned, since they cannot change
Their element, to draw the thinner air."—*Milton.*

1a

1b



3a

2a

2b

Sowerby, del. et lith.

TRITON.

PLATE I.

Genus TRITON, De Montford.

Testa ovata, vel oblonga, vel elongata, irregulariter varicosa, varicibus interdum decem aut duodecim, rarissimè pluribus, interdum perpaucis, subsolitariis, interdum nullis; spirâ prominulâ, plus minusve elato-acuminatâ; anfractibus sæpissimè irregulariter convolutis, variè costatis, costis nunc lævibus, nunc nodulosis, nunc tuberculatis; columellâ plerumque plicato-rugosâ, labro intùs denticulato, sæpè crenato; canali variabili, interdum brevissimo, interdum elongato, plus minusve ascendente. Operculum corneum.

Shell ovate, oblong, or elongated, irregularly varicose, varices sometimes ten or twelve in number, very rarely more, sometimes very few, remote from each other, sometimes none; spire prominent, more or less elevately acuminated; whorls for the most part irregularly convoluted, variously ribbed, ribs either smooth, nodulous, or tuberculated; columella generally plicately wrinkled; lip denticulated within, often crenated; canal extremely variable, sometimes very short, sometimes very long, more or less turned upwards. Operculum horny.

The genus *Triton* includes a large portion of that extensive and beautiful series of varicose *Canalifera* which are systematically divided according to the number and general arrangement of the varices. The *Murices* are those which present the greatest number of varices; the *Ranellæ* those which deposit a varix at every half volution, one under the other on each side of the shell; and the *Tritons* are those in which the periodical development of a varix occurs less than twice on a whorl, or but seldom; so that the genus under consideration includes not only species with one varix on each whorl, but species which have a varix on the last whorl only. Some species are found occasionally without a varix at all, the *Triton clandestinus* for example, but this is merely a fortuitous variation of growth. To be a *Triton*, the species must have the property of depositing a varix, though it may not always be exercised.

Such is the arrangement of the varix-depositing *Canalifera* in popular use; the beautiful chain of affinity, however, which exists between the *Triton* with one varix, and the *Murex* with many, passing through several well-defined groups, has induced various suggestions of amendment. De Montford and Schumacher propose, on the one hand, that each particular group of Tritons should rank as a genus (*Persona, Aquillus, Lotoria, Ranularia, Lampusia*, ex. gr.), whilst Pfeiffer, on the other hand, unites the *Tritons* and the *Ranellæ* in one and the same genus. To those who would acquire notoriety by the creation of genera, the Tritons offer peculiar temptation; it should be remembered, however, that the ends of classification may be fully carried out by means of concise sectional subdivision: the changes introduced by those authors cannot be maintained without subverting the names in general use, (destroying, as it were, the medium of circulation,) and I therefore adopt the genus *Triton* of Lamarck and Deshayes without alteration even in the title.

Several modern authors, chiefly continental, amongst whom may be mentioned Quoy and Gaimard, Gray, Philippi, Menke, Pfeiffer and Anton, have adopted Cuvier's title of *Tritonium* in reference to this genus, because of its priority over Lamarck's name on the one hand, and on account of the pre-application of the word *Triton* on the other.

The word *Triton* is, however, by far the more generally received title of the genus under consideration, and I think the following statement will serve to establish the propriety of maintaining it.

TRITONIUM should be abandoned for two reasons: first, because it was used towards the latter part of the eighteenth century, both by Müller in his 'Zoologiæ Danicæ Prodromus,' and by Fabricius in his 'Fauna Grœnlandica,' in reference to a miscellaneous group of shells, not one of which belongs to the genus *Tritonium* of Cuvier (*Triton*, Lamarck): they were principally *Fusi* and *Buccina*, and amongst others included the *Fusus antiquus, Fusus despectus, Buccinum undatum, Buccinum glaciale, Purpura lapillus*, &c.; and secondly, the word *Tritonia* (differing only in termination) was applied by Cuvier to a genus of naked nudibranchiate Gastropods, and is still universally acknowledged by malacologists.

TRITON may be very properly used: because, although Linnæus applied it to a *Lepas*, which he thought to be new as having no shell, it had been used in error, as the following note by Cuvier himself from the latest edition of the 'Règne Animal' (1830) will testify:—"Linnæus supposant qu'il existe aussi de ces cirrhopodes sans coquilles, leur donnait alors le nom de *Triton*; mais l'existence de ces *Tritons* dans la nature ne s'est pas confirmée, et l'on doit croire que Linnæus n'avait vu qu'un animal d'Anatife arraché de sa coquille." I must admit, however, that it was extremely injudicious, to say the least of it, on the part of Lamarck to select a name which had been introduced, though erroneously, by Linnæus in another part of the system.

The *Tritons* are shells of much more solid structure than the *Murices* or *Ranellæ*, and of much more simple growth. They are not furnished with any spines, nor have they any ramified branches like the *Murices*; the rude manner in which the whorls are convoluted seems rather to indicate that their animal inhabitant, though possessing abundant power of calcification, is of somewhat sluggish growth. The epidermis of the *Tritons* is often remarkably thick, hairy and bristly, and is sometimes accompanied with small tufts of bristles. Another curious peculiarity in these shells is the structure of the apex: it appears in numerous instances to be formed of horny substance, thinly plated with shelly matter, and it is not an uncommon thing to find examples in which the calcareous plating is broken off so as to expose the horny cast underneath. The columella of the *Tritons* is generally covered with a bright coat of wrinkled enamel, and the outer lip becomes thickened in a manner exceedingly curious; upon arriving at maturity the lip curls under so as to form a deep broad channel or gutter, and this is then filled up to form the thickened lip. The varices are all constructed in the same manner, each forming for a time the margin of the aperture; they are destined, it is conjectured, to protect the lip during a season of rest, and it would be extremely interesting if it could be discovered what length of time ordinarily elapses between the formation or deposit of the varix, and the renewal of the operation of growth.

The *Tritons* appear to be widely distributed over the globe: of from eighty to a hundred species now before me, the chief portion are from the Molucca, Philippine and Pacific Islands; some few are from the western coast of America, some from China, several from New Holland, Ceylon, and Mozambique; and there are also one or two from the Mediterranean, the Cape of Good Hope, the West Indies, and the United States.

The illustration of this beautiful genus has been singularly neglected by naturalists, and affords me the opportunity of contributing figures of a large number of species that have been only known hitherto to their possessors. "Kiener," as M. Deshayes says, "contents himself with publishing thirty-two species:" in addition to these, I have (as Sowerby made no selection of *Tritons* in his 'Conchological Illustrations') the sixteen species described in the 'Proceedings of the Zoological Society,' about thirty new ones, the produce chiefly of Mr. Cuming's researches amongst the Philippine Islands, and several recently described by Mr. Hinds from the collection of Captain Belcher of H.M.S. "Sulphur."

Species 1. (Fig. *a*, Mus. Cuming.)

TRITON TUBEROSUS. *Trit. testâ elongato-ovatâ, varicibus senis rotundis; spirâ acuminatâ; anfractibus supernè leviter depressis, transversim costatis, costis tuberculato-nodosis, varicem super valdè prominentibus, interstitiis tuberosissimis; cinereâ aut nigricante-fuscâ, albizonatâ, varicibus albis; columellâ nitidè encaustica, albâ, subobsoletè rugosâ, callositate parvâ supernè armatâ; aperturâ ovatâ, fauce rubido plus minusve tinctâ, labro intùs nodoso-denticulato; canali breviusculo, ascendente.*

THE QUILTED TRITON. Shell elongately ovate, with six round varices; spire acuminated; whorls slightly depressed at the upper part, transversely ribbed, ribs tubercularly knobbed, very prominent over the varices, interstices full of irregularly-sized oblong bumps; ash-colour or blackish brown, zoned with white, varices white; columella brightly enamelled, white, rather obsoletely wrinkled, armed at the upper part with a small callosity; aperture ovate, interior more or less stained with red, lip nodulously denticulated; canal rather short, turned upwards.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 635.

Variety β. (Fig. *b*, Mus. Cuming.)

Testa omninò alba.

Shell entirely white.

Hab. Island of Annaa (Chain Island), Pacific Ocean (found on the reefs); Cuming.

The title of "quilted" which I have applied to this well-known species is suggested by the small oblong tuberosities with which its entire surface is covered. The dark red painting in the mouth is also a very characteristic feature.

Species 2. (Mus. Cuming.)

TRITON SUBDISTORTUS. *Trit. testâ ovato-conicâ, varicibus septem depressiusculis; spirâ acuminatâ; anfractibus ventricosis, liris nodulosis irregularibus undiquè cinctis, supernè leviter angulatis, tuberculorum serie unicâ ad angulum armatis; albidâ, rufescente-fusco variè tinctâ, anfractu ultimo subobsoletè albibalteato; columellâ medio lævigatâ, aperturæ fauce albâ, labro tenuiculo; canali brevi.*

THE SOMEWHAT-DISTORTED TRITON. Shell ovately conical, with seven rather depressed varices; spire acuminated; whorls ventricose, everywhere encircled with irregular noduled ridges, slightly angulated at the upper part, armed at the angle with a row of tubercles; whitish, variously stained with light reddish brown, last whorl encircled with a faint white belt; columella smooth in the middle, interior of the aperture white, lip rather thin; canal short.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 638.

Hab. Port Adelaide and King George's Sound, New Holland.

This species presents somewhat the form of the large trumpet-shaped Tritons, and the varices have the same flattened character. The nodules which ornament the transverse ridges are very irregular both in size and distance from each other.

4a

3b

4b

6

Sowerby, del. et lith.

TRITON.

PLATE II.

Species 3. (Fig. 3 *b*, Mus. Cuming.)

TRITON VARIEGATUS. *Trit. testâ elongato-conicâ, tubæformi, infernè ventricosâ; varicibus tredecim aut quatuordecim, planiusculis; spirâ elatâ, prope apicem subtilissimè nodulosâ; anfractibus irregulariter convolutis, transversim obtuso-costatis, liris quaternis vel quinis crenato-crispis juxta suturam cingulatis; albidâ aut pallidè luteolâ, purpureo-rubro spadiceoque lautè variegatâ et tessellatâ; columellâ nigricante-purpureâ, rugis plurimis lacteis encausticis ornatâ, rugâ superâ maximâ, plicæformi; aperturæ fauce rufescente; labro denticulato, intùs interdum albo bidentato; canali brevissimo, subrecurvo.*

THE VARIEGATED TRITON. Shell elongately conical, trumpet-shaped, ventricose at the lower part; varices thirteen or fourteen in number, rather flat; spire elevated, very finely noduled near the apex; whorls irregularly convoluted, transversely obtusely ribbed, encircled next the suture with four or five crenately crisped or beaded ridges; whitish or pale yellow, gaudily variegated and tessellated with purple-red and bay colour; columella blackish purple, ornamented with numerous cream-coloured enamelled wrinkles, the uppermost wrinkle being very large and plait-like; interior of the aperture reddish; lip denticulated, sometimes double-toothed on the inner edge with white; canal very short, somewhat recurved.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 623. Encyclopédie Méthodique, pl. 421. f. 2, *a* and *b*.

Buccinium variegatum, Fabius Columna.

Murex Tritonis, Linnæus.

Lampusia Tritonis, Schumacher.

Hab. Eastern Seas.

Variety β. (Plate I. Fig. 3 *a*, Mus. Cuming.)

Testa brevior, anfractibus supernè obtuso-angulatis, nodulis prope apicem ferè obsoletis.

Shell shorter, whorls obtusely angled round the upper part, nodules near the apex almost obsolete.

DE BLAINVILLE, Malacologie, pl. 18. f. 3 and 3 *a*.

Hab. West Indies.

Two very distinct varieties of this ancient species appear to have been figured by authors without particular discrimination; and it is important to notice that one is from the eastern, the other from the western hemisphere. The former, Fig. 3 *b*, is the more elongated and gracefully convoluted shell, and attains rather the larger size; the latter, Fig. 3 *a*, Plate I., forms a peculiar angle or hump round the upper part of the whorls, and the spire is smoother towards the apex.

Species 4. (Fig. *a* and *b*, Mus. Cuming.)

TRITON LINEATUS. *Trit. testâ ovato-fusiformi, varicibus quinque, crassis, prominentibus, subcompressis; spirâ mediocri; anfractibus infernè attenuatis, subirregulariter convolutis, supernè retuso-angulatis, nodosis, nodis grandibus, longitudinaliter undato-plicatis; spadiceo-flavâ, lineis elevatis castaneo-fuscis, alternatim minoribus, undiquè funiculatâ, lineis interstitiisque crenulatis; columellâ rugosâ, callositate supernè armatâ, aperturæ fauce atro-purpureâ, labro intùs irregulariter albidenticulato; canali breviusculo.*

THE LINEATED TRITON. Shell ovately fusiform, with five thick, prominent, rather compressed varices; spire middling; whorls attenuated at the lower part, rather irregularly convoluted, bluntly angled at the upper part, knobbed, knobs large and longitudinally plicated in a waved manner; yellowish bay-colour, everywhere corded with raised chestnut brown lines, the alternate of which are smaller, lines as well as the interstices between them crenulated; columella wrinkled, armed at the upper part with a callosity; columella and interior of the aperture blackish purple, lip irregularly denticulated within, denticulations white; canal rather short.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Galapagos Islands, Pacific Ocean (found in coral sand at the depth of about six fathoms); Cuming.

Mr. Cuming may be justly proud of this remarkable species of Triton; it is of a yellowish bay-colour, everywhere encircled with finely crenulated chestnut-brown cords, which mount with exceeding regularity over the varices; the columella and interior of the aperture are lined with dark blackish purple, and form a striking contrast with the wrinkles and denticulated sculpture around them, which are of pure white.

Species 5. (Mus. Cuming.)

Triton gallinago. *Trit. testâ abbreviato-clavæformi, varicibus duobus, rotundis, solidis; spirâ breviusculâ, acuminatâ; anfractibus supernè angulatis, tuberculorum serie unicâ ad angulum armatis, tuberculis peculiariter plano-vellicatis, acutis, anfractûs ultimi valdè irregularibus; anfractibus infrà costatis, costis crenulatis, sub tuberculis flexuosè nodulosis, costarum interstitiis elevato-striatis; albâ, varicibus aurantio-fusco vividè tinctis; columellâ rugoso-plicatâ, aperturæ fauce albâ, labro intùs fortiter denticulato; canali subelongato, ascendente.*

The woodcock Triton. Shell abbreviately club-shaped, with two round solid varices; spire rather short, acuminated; whorls angulated at the upper part, armed at the angle with a row of sharp, peculiarly flatly-pinched tubercles, tubercles of the last whorl very irregular; whorls ribbed beneath, ribs crenulated, flexuosely noduled under the tubercles, interstices between the ribs sculptured with raised striæ; white, varices stained with bright orange-brown; columella rugosely plaited, interior of the aperture white, lip strongly denticulated within; canal rather long, turned upwards.

Reeve, Pro. Zool. Soc., 1844.

Hab. Cagayan, province of Misamis, island of Mindanao, Philippines (found in sandy mud at the depth of twenty fathoms); Cuming.

The ribs of this delicate species are noduled, and more strongly developed on the varices than on the body of the shell; and the central dorsal tubercle of the last whorl is unusually prominent, with all the appearance of a double tubercle. The canal is much shorter than that of most of the club-shaped Tritons, and is particularly curved or bent upwards.

Species 6. (Mus. Cuming.)

Triton fusiformis. *Trit. testâ abbreviato-fusiformi, solidâ, varicibus octo; spirâ acuminatâ, apice acuto; anfractibus irregulariter convolutis, supernè subangulatis, transversim striatis, striis granulis obtusis oblongis alternatim tessellatis, interstitiis subtilissimè crispis, anfractuum medio tuberculorum serie obliquâ armato, tuberculis grandibus, prominentibus; fulvo-spadiceâ, striis transversis varicibus super solidis fuscescentibus, deinde fuscescente spadiceoque articulatis; columellâ lævi, callositate parvâ supernè armatâ; aperturâ rotundâ, fauce lacteâ, labro intùs leviter denticulato; canali brevisculo, recurvo.*

The fusiform Triton. Shell abbreviately fusiform, solid, with eight varices; spire acuminated, apex sharp; whorls irregularly convoluted, rather angular at the upper part, transversely striated, striæ alternately tessellated with blunt oblong granules, interstices between the striæ very finely crisped, middle of the whorls armed with an oblique or slanting row of large prominent tubercles; yellowish bay-colour, transverse striæ light brown upon the solid varices, then articulated with light brown and bay; columella smooth, armed at the upper part with a small callosity; aperture round, interior milk-white, lip slightly denticulated within; canal rather short, curved backwards.

Kiener, Iconographie Coq. viv., p. 36. pl. 5. f. 2.

Hab. —— ?

The entire surface of this interesting solid tubercled shell is tessellated with minute oblong granules upon raised transverse striæ, the interstices between which are most delicately crisped; and about every tenth stria is broader and more strongly articulated with colour than the rest.

7

8

9

10a

10b

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

TRITON.

PLATE III.

Species 7. (Mus. Cuming.)

TRITON CLAVATOR. *Trit. testâ clavæformi, epidermide tenui rugulosâ indutâ; varicibus duobus, subrotundis; spirâ breviusculâ; anfractibus supernè angulatis, infrà rotundatis, transversim costatis, costis crenatis, superioribus tuberculatis, tuberculis compressis, setarum cristâ ornatis, longitudinaliter flexuosè digestis, infernè evanidis, costarum interstitiis striatis, striis elevatis, plus minusve interruptis; albidâ, varicibus fuscescente partim tinctis; columellâ rugosâ, labro intùs rugoso-denticulato, utroque vividè luteo-coccineo; canali longissimo, subcontorto.*

THE CLUB TRITON. Shell club-shaped, covered with a thin wrinkled epidermis; varices two in number, round; spire rather short; whorls angulated at the upper part, rounded beneath, transversely ribbed; ribs crenated, upper ribs tuberculated, tubercles compressed, ornamented with a tuft of bristles, arranged longitudinally in a flexuous direction, disappearing inferiorly, interstices between the ribs striated, striæ raised, more or less interrupted; whitish, varices partially stained with brown; columella wrinkled, lip rugosely denticulated within, both vividly stained with yellowish scarlet; canal very long, rather twisted.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 635.

Murex clavator, Chemnitz, Conch. Cab., vol. xi. pl. 190. f. 1825 and 1826.

Ranularia longirostra, Schumacher.

Hab. Island of Burias, Philippines (found in sandy mud at the depth of seven fathoms); Cuming.

This well-known species appears to have been but imperfectly figured hitherto; neither Chemnitz nor Kiener's figures convey any idea of the rich scarlet which the specimen here figured exhibits in the mouth; the tufts of bristles upon the tubercles of the last whorl form another interesting feature, but this is a character rarely to be met with, on account of the difficulty of preserving them.

The shell represented in Sowerby's 'Genera' under the above title, also in my 'Conch. Systematica,' vol. ii. pl. 243. f. 3. (to both of which figures M. Deshayes unfortunately refers in his new edition of Lamarck, vol. ix. p. 635), is not the *Triton clavator*, but a new and very distinct species represented in the following plate, Fig. 11, *a* and *b* (*Triton exilis*).

Species 8. (Mus. Cuming.)

TRITON CANALIFERUS. *Trit. testâ clavæformi, ventricosâ, varice unico, rotundo; spirâ breviusculâ; anfractibus rotundis, supernè profundè depresso-canaliculatis, longitudinaliter plicato-nodulosis, transversim costatis, costis biliratis, lirâ exilissimâ interveniente; albâ, columellâ fortiter rugosâ, labro intùs rugoso-denticulato; canali longissimo, gracili.*

THE CANALICULATED TRITON. Shell club-shaped, ventricose, with a single round varix on the last whorl; spire rather short; whorls round, deeply depressly canaliculated at the upper part, longitudinally plicately noduled, transversely ribbed; ribs double-ridged, with a very fine delicate ridge running between them; white, columella strongly wrinkled, lip rugosely denticulated within; canal very long, slender.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 634.

KIENER, Iconographie Coq. viv., pl. 13. f. 2.

Murex caudatus, Gmelin.

Tritonium caudatum, Pfeiffer.

Hab. China.

According to the strict rule of priority, the specific title of *caudatus* should be applied to this shell; but the name used by Lamarck is so singularly characteristic of its leading peculiarity, the remarkable hollow channel round the top of each whorl, that I do not hesitate to maintain it. The name of *caudatus* has moreover been applied by Say to another species, and I think the law of priority should be waived when a change would so entirely subvert the names in popular use.

Species 9. (Mus. Cuming.)

TRITON NODIFERUS. *Trit. testâ ovato-conicâ, tubæformi, infernè ventricosâ, valdè inflatâ, epidermide tenuissimâ sparsim indutâ; varicibus undecim aut duodecim, nodiferis; spirâ breviusculâ, acuminatâ; anfractibus convexis, subirregulariter convolutis, transversim subobsoletè liratis, in medio nodorum seriebus duabus cingulatis, nodis anfractûs ultimi subevanidis, an-*

fractuum parte superiori obtusè angulatâ, fortiter liratâ, liris lævibus; albâ, rubro-fuscescente nebulatâ et tessellatâ; columellâ supernè plicatâ, plicâ superâ valdè prominente; aperturâ amplâ, fauce albâ, labro intùs crenato-denticulato; canali brevi.

The knobbed Triton. Shell ovately conical, trumpet-shaped, ventricose towards the lower part, very much inflated, sparingly covered with a very slight epidermis; varices eleven or twelve in number, knobbed; spire rather short, acuminated; whorls convex, rather irregularly convoluted, transversely rather obsoletely ridged, encircled round the middle with two rows of knobs, which almost disappear upon the last whorl; upper part of the whorls obtusely angled, strongly ridged, ridges smooth; white, clouded and tessellated with reddish brown; columella plaited at the upper part, uppermost plait very prominent; aperture large, interior white, lip crenately denticulated within; canal short.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 624.

Kiener, Iconographie Coq. viv., pl. 1.

Murex nerei (pars), Dillwyn.

Hab. Mediterranean.

This species is characterized by its ventricose and inflated growth, as well as by the absence of any tinge of red or purple, either externally or internally. It is not the only nodiferous of the large trumpet-shaped Tritons, for the *Triton australis* is nodiferous; nor is it the most strongly nodiferous, for in the *Triton Sauliæ*, Plate V. Fig. 17, a new species collected by Mr. Cuming in the Philippine Islands, the knobs are much more strongly developed than in either of the species just spoken of.

The *Triton nodiferus* is a common inhabitant of the Mediterranean: having lately received upwards of sixty or seventy specimens collected by a gentleman for amusement during a short residence at Messina, I can fully testify of its abundance; and Philippi mentions that certain portions of the animal are esteemed as delicious (though probably tough) eating by the Neapolitan fishermen.

Species 10. (Mus. Cuming.)

Triton Ranelloides. *Trit. testâ Ranellæformi, varicibus decem, nodiferis; spirâ elevatâ; anfractibus, superficie totâ subtilissimè reticulatâ, supernè depressis, infrà nodis grandibus biseriatim, anfractu ultimo triseriatim, cinctis, nodis inferioribus minoribus; luteo-albidâ, fuscescente variâ, tæniis subtilissimis fuscescente alboque articulatis, lineis fuscis fortioribus inter nodos, cinctâ; columellâ maculâ purpureâ albirugosâ supernè tinctâ; aperturæ fauce albâ, labro intùs leviter denticulato; canali brevissimo.*

The Ranella-like Triton. Shell Ranella-shaped, with ten nodiferous varices; spire raised; whorls very finely or minutely reticulated over their entire surface, depressed at the upper part, encircled beneath with two rows of large knobs, the lower of which are the smaller, last whorl exhibiting three rows of knobs; whitish yellow, variegated with light brown, encircled with exceedingly fine fillets of articulated brown and white, with very much stronger brown lines between the knobs; columella stained at the upper part with a purple spot, crossed with white wrinkles; interior of the aperture white, lip slightly denticulated within; canal very short.

Reeve, Pro. Zool. Soc., 1844.

Hab. Matnog, Province of Albay, Island of Luzon, Philippines (found on the reefs); Cuming.

Partaking as this shell does in almost equal proportion of the characters of both *Triton* and *Ranella*, it has been a matter of some difficulty to decide to which of the two genera it might with the greater propriety be referred.

11a

11b

12a

13

14

TRITON.

PLATE IV.

Species 11, *a* and *b*. (Mus. Cuming.)

TRITON EXILIS. *Trit. testâ clavæformi, varice unico parvo; spirâ breviusculâ; anfractibus supernè angulatis, infernè coarctatis, transversim subirregulariter costatis, costis liris parvis longitudinalibus decussatis, tuberculatis, tuberculis grandibus, prominentibus, subcompressis; albâ, aurantio-fusco sparsim tinctâ; columellâ plicatâ, plicis superioribus valdè majoribus, aperturæ fauce albâ, labro intùs rugoso-denticulato; canali longissimo, supernè peculiariter contorto.*

THE SLENDER TRITON. Shell club-shaped, with a single small varix; spire rather short; whorls angulated at the upper part, contracted at the lower, transversely rather irregularly ribbed, ribs crossed by small longitudinal ridges, tuberculated, tubercles large, prominent, rather compressed; white, stained in places with orange-brown; columella plaited, upper plaits much the larger, aperture white within, lip rugosely denticulated; canal very long, peculiarly twisted at the upper part.

REEVE, Pro. Zool. Soc., 1844.

Hab. San Nicolas, island of Zebu, Philippines (found in sandy mud at the depth of ten fathoms); Cuming.

This highly interesting species has been erroneously published by Mr. Sowerby in his 'Genera of Shells,' and by myself in my 'Conchologia Systematica,' vol. ii. plate 243. fig. 3, for the *Triton clavator*, and demonstrates how necessary is the examination of an entire genus by comparison for the proper discrimination of the species. No question as to the specific difference of these two shells could however be urged, for they vary materially both in form and detail of sculpture. The *Triton clavator* is comparatively full and ventricose, with the upper ribs only moderately tubercled; the *Triton exilis* is small, peculiarly contracted round the lower part, with the tubercles very prominently developed entirely across the whorls: in the former species there is a varix on the penultimate whorl as well as upon the last whorl; in the latter species, as in the *Triton canaliferus*, there is no varix upon the penultimate whorl; lastly, the mouth of the former species is either yellowish or yellowish scarlet, whilst that of the latter exhibits not the slightest indication of colour, and the stains of orange-brown with which it is marked externally are of a character not to be misunderstood.

Species 12. (Fig. *a*, Mus. Cuming.)

TRITON AUSTRALIS.

(For description of this species see Plate V.)

Species 13. (Mus. Cuming.)

TRITON CLANDESTINUS. *Trit. testâ fusiformi-oblongâ, varice aut unico aut nullo; spirâ mediocri; anfractibus rotundis, pallidè spadiceis, liris angustis, prominentibus, lævibus, luteo-fuscis, æquidistantibus, examussim funiculatis, interstitiis longitudinaliter subtilissimè striatis; columellâ supernè callositate albâ unicâ armatâ, infernè subobsoletè rugulosâ; aperturæ fauce albâ, labro intùs fusco-denticulato; canali breviusculo, subascendente.*

THE CLANDESTINE TRITON. Shell fusiformly oblong, with either a single varix or none at all; spire middling; whorls round, light bay-colour, corded with great precision by equidistant, narrow, prominent, smooth, yellowish brown ridges; upper part of the columella armed with a single white callosity, lower part rather obsoletely wrinkled; interior of the aperture white, lip denticulated within, denticulations brown; canal rather short, slightly turned upwards.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 639.

Murex clandestinus, Chemnitz.

Hab. San Nicolas, island of Zebu, Philippines (found in sandy mud at the depth of six fathoms); Galapagos Islands (found under stones); Cuming.

This shell is remarkable for its extreme regularity of growth, the entire surface being corded with narrow, equidistant ridges, increasing gradually in volume with the increase of the whorls. The example figured by Kiener has a varix down the middle of the last whorl, but the specimen here represented (as well as that figured by Chemnitz) has not any.

Species 14. (Mus. Cuming.)

TRITON PFEIFFERIANUS. *Trit. testâ fusiformi, varicibus septem prominentibus, acutangularibus; spirâ elatâ; anfractibus subirregulariter convolutis, convexis, supernè plano-depressis, leviter canaliculatis, transver-*

sim costulatis, costulis irregularibus, nunc angustis, nunc latioribus, striis elevatis longitudinalibus nodulosо-decussatis, anfractuum parte mediand nodosá, nodis distantibus, longitudinaliter subplicatis; fuscescente, fusco pallidè variá; columellá rugulosá, labro intùs rugoso-denticulato; canali subelongato.

Pfeiffer's Triton. Shell fusiform, with seven prominent sharp-angled varices; spire raised; whorls rather irregularly convoluted, convex, flatly depressed round the upper part, slightly canaliculated, transversely finely ribbed, ribs irregular, sometimes narrow, sometimes wider, nodulously crossed with raised longitudinal striæ, middle portion of the whorls knobbed, knobs distant, longitudinally subplicated; very light brown, palely variegated with brown; columella wrinkled, lip rugosely denticulated; canal rather elongated.

Reeve, Pro. Zool. Soc., 1844.

Hab. ——?

This species may probably be recognised as one of not uncommon occurrence, though not hitherto described; its leading features are the rude manner in which one whorl is deposited on the other, the prominent sharp-angled structure of the varices, and the delicate granulated sculpture of the ribs where they are crossed by the raised striæ; and its general appearance is altogether peculiar.

I take the liberty of dedicating this characteristic species to Dr. Pfeiffer of Cassel, Germany, on account of the diligence that gentleman has exercised in arranging the synonyms of the genera *Triton* and *Ranella* in his "Memoir of the genus *Tritonium*," Revue Zoologique de la Société Cuviérienne.

15

12b

16

17a

17b

Sowerb. del. et lith.

TRITON.

PLATE V.

Species 12. (Pl. IV. f. 12 *a*, Mus. Cuming.)

TRITON AUSTRALIS. *Trit. testâ ovato-conicâ, tubæformi, infernè inflatâ, varicibus denis undenisve plano-depressis; spirâ breviusculo-acuminatâ; anfractibus leviter angulatis, nodorum subindistinctorum seriebus duabus armatis, transversim liratâ, liris subtilissimè striato-crenulatis; pallidè violascente, fuscescente variegatâ et maculatâ; epidermide tenui; columellâ lævi, obsoletè plicatâ, plicâ albâ unicâ prominente supernè munitâ; labro intus denticulato; aperturâ ovatâ, subamplâ, fauce albido-violascente.*

THE SOUTHERN TRITON. Shell ovately conical, trumpet-shaped, inflated towards the lower part, with ten or eleven flatly-depressed varices; spire rather shortly acuminated; whorls slightly angulated, armed with two rows of rather indistinct knobs, transversely ridged, ridges very finely striately crenulated; pale violet-colour, spotted and variegated with light brown; epidermis slight; columella smooth, obsoletely plaited, furnished with a single prominent white plait at the upper part; lip denticulated within; aperture ovate, rather large, interior very palely tinged with violet.

Variety β. (Pl. V. f. 12 *b*, Mus. Cuming.)

Testa vividè cocceo-rufescens, liris hinc illinc latioribus, subdepresso-costæformibus, rufescente-fusco tessellatis.

Shell tinged with bright scarlet-red, ridges here and there wider, rather depressly rib-shaped, tessellated with reddish brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 625.

Murex Tritonium australe, Chemnitz.

Murex Nerei (pars), Dillwyn.

Hab. New Holland.

There appears to be two very well-defined varieties of this species, the one tinged with violet, the other with scarlet-red. As in all the nodiferous Tritons, the knobs are strongest and most prominent on the penultimate whorl.

Species 15. (Mus. Cuming.)

TRITON CORRUGATUS. *Trit. testâ fusiformi-turritâ, varicibus senis septemve; spirâ obtuso-elongatâ; anfractibus supernè depressis, transversim corrugato-costatis, costis tuberculato-nodosis, plerisque subobsoletè duplicibus, interstitiis subprofundis, striatis; albâ, fusco hinc illinc sparsim tinctâ; columellâ læviusculâ, callositate supernè armatâ; labro fortiter dentato, dentibus fusco tinctis; aperturâ parvâ, fauce albâ; canali breviusculo, ascendente.*

THE CORRUGATED TRITON. Shell fusiformly turreted, with six or seven varices; spire obtusely elongated; whorls depressed at the upper part, transversely corrugately ribbed, ribs tuberculously noduled, most of them rather obsoletely double, interstices between the ribs rather deep, striated; white, sparingly stained here and there with brown; columella rather smooth, armed at the upper part with a callosity; lip strongly toothed, teeth stained with brown; aperture small, interior white; canal rather short, turned upwards.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 628. Enc. Méth., pl. 416. f. 3 *a b*.

Hab. Mediterranean, coast of Messina; Philippi.

This shell is very peculiarly tinged in places with light reddish brown, and the ribs exhibit a half-waved or corrugated character which I have not observed in any other species.

Species 16. (Mus. Cuming.)

TRITON TRIPUS. *Trit. testâ trigono-clavæformi, varicibus tribus; spirâ brevi; anfractibus supernè angulatis, ad angulum tuberculatis, juxta suturam profundè canaliculatis, transversim costatis, costis subdistantibus, liris tribus vel quatuor subtilissimis intervenientibus, costis lirisque fortiter crenatis; luteo-fuscescente, albo sparsim variâ; columellâ corrugatâ; canali longiusculo, subascendente.*

THE TRIPOD TRITON. Shell triangularly club-shaped, with three varices; spire short; whorls angulated at the upper part, tuberculated on the angle, deeply canaliculated next the suture, transversely ribbed, ribs rather distant, with three or four very fine ridges running between them, ribs and ridges strongly crenated; pale yellowish brown, sparingly variegated with white; columella wrinkled; canal rather long, a little turned upwards.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 634.

Murex tripus, Chemnitz.

Murex femorale, var., Dillwyn.

Hab. China.

The ribs and ridges of this shell being strongly crenated have almost a beaded appearance.

Species 17. (Fig. *a* and *b*, Mus. Saul.)

Triton Sauliæ. *Trit. testâ elongato-conicâ, tubæformi, paululùm contortâ, basim versus subangulato-attenuatâ, varicibus novenis denisve plano-depressis; spirâ acuminatâ; anfractibus subangulatis, nodorum prominentium seriebus duabus infra angulum armatis, subtilissimè liratis, liris apicem versus minutissimè crenulatis; albido aut lutescente, rubido-fusco variegatâ et maculatâ; epidermide tenui; columellâ lævi, obsoletè plicatâ, plicâ albâ unicâ supernè munitâ; labro intus denticulato; aperturâ angulato-ovatâ, fauce cærulescente-albâ.*

Saul's Triton. Shell elongately conical, trumpet-shaped, a little contorted, rather angularly attenuated towards the base, with nine or ten flatly depressed varices; spire acuminated; whorls somewhat angulated, armed below the angle with two rows of prominent knobs, very finely ridged, ridges most minutely crenulated towards the apex; whitish or yellowish, variegated and spotted with rich dark reddish brown; epidermis slight; columella smooth, obsoletely wrinkled, furnished with a single white plait at the upper part; lip denticulated within; aperture angularly ovate, interior bluish white.

Reeve, Pro. Zool. Soc., 1844.

Hab. Matnog, Island of Luzon, Philippines; Cuming.

I was about to figure a somewhat discoloured specimen of this shell, collected by Mr. Cuming at the above-mentioned locality, when a smaller but very richly painted example presented itself for comparison from the collection of Miss Saul. It is unquestionably distinct from any of the trumpet-shaped species, though curiously intermediate between the *Triton variegatus* and *australis*. I now dedicate it with great pleasure to a much-esteemed collector, whose cabinet bears interesting testimony of her excellent discrimination of species.

18a

18b

19b

19a

20

TRITON.

PLATE VI.

Species 18. (Fig. *a* and *b*, Mus. Cuming.)

TRITON SINENSIS. *Trit. testâ elongato-clavæformi, varicibus duabus rotundis; spirâ subelatâ; anfractibus costis duplicibus subdistantibus undiquè cinctis, striâ unicâ elevatâ interveniente, costis superis leviter, nodosis, costis interstitiisque subtilissimè crenulatis; albidâ, lutescente tinctâ, varicibus inter costas lutescentibus; columellâ multirugosâ; labro denticulato; aperturæ fauce albâ; canali elongato, subcontorto.*

THE CHINESE TRITON. Shell elongately club-shaped, with two round varices; spire rather elevated; whorls everywhere encircled with rather distant double ribs, with a single raised stria running between them, upper ribs slightly nodulous, ribs and the interstices between them very finely crenulated; whitish, stained with pale yellow, varices stained between the ribs with pale yellow; columella covered with wrinkles; lip denticulated; interior of the aperture white; canal elongated, a little contorted.

REEVE, Pro. Zool. Soc., 1844.

Hab. China.

This shell is not uncommon in collections, though it appears to have been singularly neglected by naturalists. It presents a most remarkable modification of the *Triton canaliferus*: the entire sculpture of the two species—such as, for example, the double rib, the intervening raised line, the two only varices, the profusely wrinkled columella, the long slightly twisted canal, &c.—is the same in both; but the canaliculated structure of the sutures, which forms so very important a specific character in the *Triton canaliferus*, is wanting. The *Triton Sinensis* might therefore be recognised as an example of the *Triton canaliferus* with the spire pushed out as it were; or one in which the whorls have not been subject to that peculiar depression which forms so deep and characteristic a channel round the suture.

Species 19. (Fig. *a*, Mus. Cuming.)

TRITON LOTORIUM. *Trit. testâ subfusiformi-turritâ, crassâ, solidâ, infernè distortâ, varicibus quaternis quinisve; spirâ rudi, subobtusâ; anfractibus supernè angulatis, fortiter tuberculatis, obsoletè depresso-costatis, costis crenulatis; rufescente-fulvâ, nigricante-fusco supra aperturam, et varices super, inter costas, ornatâ; columellâ plus minusve obsoletè plicatâ; labro intus denticulato; canali brevi, lato.*

THE WASHING-BATH TRITON. Shell somewhat fusiformly turreted, thick, solid, distorted at the lower part, with four or five varices; spire rude, rather obtuse; whorls angulated at the upper part, obsoletely depressly ribbed, ribs crenulated; reddish yellow, ornamented above the aperture and upon the varices between the ribs with blackish brown; columella more or less obsoletely plaited; lip denticulated; canal short, broad.

Variety β. (Fig. 19 *b*, Mus. Saul.)

Testa infernè trigono-attenuata, columellæ labrique limbo rubido-sanguineo vividè tincta.

Shell triangularly attenuated at the lower part, edge of the lip and of the columella vividly stained with ruddy blood-colour.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 631.

Murex lotorium, Linnæus.

Hab. Ceylon.

The *Triton lotorium* is a heavy, solid, irregularly-humped shell, of a remarkably distorted growth; the ruddy blood-colour described in Variety β. is carried down each border of the canal.

Species 20. (Mus. Cuming.)

TRITON GRANDIMACULATUS. *Trit. testâ ovato-turritâ, crassâ, infernè coarctatâ, varicibus tribus; spirâ subobtusâ; anfractibus supernè angulatis, transversim exiliter striatis et liratis, liris superis tuberculato-nodosis; fuscescente-fulvâ, varicibus et columellæ parte superiori maculis grandibus nigerrimo-fuscis ornatis; columellâ lævi vel obsoletè plicatâ; labro intus dentato, dentibus nigerrimo-fuscis; aperturæ fauce albâ; canali breviusculo, subascendente.*

THE LARGE-SPOTTED TRITON. Shell ovately turreted, thick, contracted at the lower part, with three varices; spire rather obtuse; whorls angulated at the upper part, transversely faintly striated and ridged, upper ridges tubercularly knobbed; light brownish yellow, varices and upper part of the co-

lumella ornamented with large spots of very dark brown; columella smooth or obsoletely plaited; lip dentated within, teeth very dark brown, interior of the aperture white; canal rather short, a little turned upwards.

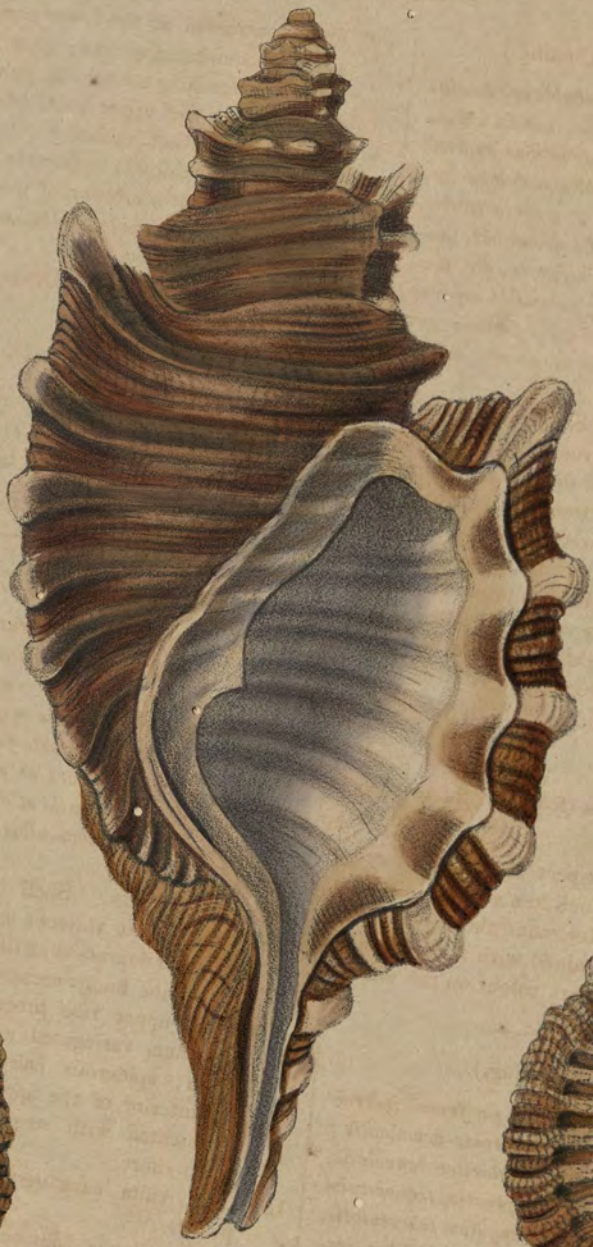
Reeve, Pro. Zool. Soc., 1844.

Hab. Matnog, province of Albay, island of Luzon (found on the reefs); Cuming.

This shell appears at first sight to be nothing more than a casual variety of the *Triton lotorium*; it will be found, however, upon examination to differ materially. The large tuberculated humps of the *Triton lotorium* are here represented by regular series of small rounded knobs, which impart a kind of cancellated structure to the earlier whorls which is very characteristic; the lower part of the shell is not distorted; and the varices, especially at the back, are vividly painted with large distinct brown blotches.

21a

21b



22

23

TRITON.

PLATE VII.

Species 21. (Fig. *a* and *b*, Mus. Cuming.)

TRITON SARCOSTOMA. *Trit. testâ subabbreviato-claviformi, varicibus duabus, rotundis, solidiusculis; spirâ brevi, apice subdepresso; anfractibus supernè angulatis, transversim costatis, costis noduloso-crenatis, costarum interstitiis subtiliter crenato-liratis, costis superis tuberculatis, tuberculis grandibus, prominentibus, subcompressis; spadiceo-fuscescente, costis inter tuberculos albimaculatis; columellâ supernè et infernè leviter corrugatâ, labro intus fortiter rugoso-denticulato; columellâ labroque carneo eximiè tinctis.*

THE FLESH-TINTED MOUTH TRITON. Shell rather abbreviately club-shaped, with two round, rather solid varices; spire short, apex rather depressed; whorls angulated at the upper part, transversely ribbed, ribs nodulously crenated, interstices between the ribs finely crenately ridged, upper ribs tuberculated, tubercles large, prominent, rather compressed; pale yellowish brown, ribs blotched with white between the tubercles; columella slightly wrinkled at the upper and lower parts, lip strongly rugosely denticulated within; columella and lip delicately tinged with flesh-colour.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs); Cuming.

This shell has somewhat the aspect of the *Triton cynocephalus*; it differs in being much less ventricose, and in having very prominent tubercles round the upper part of the whorls. The mouth is stained with a pale flesh-tint without any indication of dark colour on the columella.

Species 22. (Mus. Cuming.)

TRITON FEMORALE. *Trit. testâ trigono-fusiformi, infernè coarctatâ, varicibus senis, compresso-acuminatis; spirâ subelatâ; anfractibus irregulariter convolutis, triangularibus, supernè leviter depressis, transversim costatis, costis subdistantibus, ad angulum tuberculatis, varices super radiantibus, interstitiis subtiliter liratis; epidermide pilosâ et setosâ; columellâ lævi, labro intus lævi, aperturæ fauce pallidè violaceâ; canali longiusculo, subascendente.*

THE THIGH-ARMOUR TRITON. Shell triangularly fusiform, contracted at the lower part, with six compressly acuminated varices; spire rather elevated; whorls irregularly convoluted, triangular, slightly depressed at the upper part, transversely ribbed, ribs rather distant, radiating over the varices, interstices finely ridged; epidermis hairy and bristly; columella smooth, interior of the aperture more or less stained with pale violet; canal rather long, somewhat ascending.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 632.

Murex femorale, Linnæus.

Hab. West Indies.

The angular structure of the whorls constitutes a very peculiar feature in this shell. The varices originally served as models for the gadroon border used by silversmiths in the decoration of plate.

Species 23. (Mus. Cuming.)

TRITON PILEARIS. *Trit. testâ fusiformi-turritâ, varicibus septem octove; spirâ elatâ; anfractibus convexis, supernè depressiusculis, transversim costatis, costis exiliter crenatis, alternis majoribus, duplicibus, superis tuberculatis; albido-fuscescente aut cæruleo-cinereâ, fusco variegatâ et strigatâ; epidermide pilosâ et setosâ; columellâ et aperturæ fauce sanguineo-rubris, rugis fortibus albis profusè ornatis; canali breviusculo.*

THE HAIRY TRITON. Shell fusiformly turreted, with seven or eight varices; spire raised; whorls convex, rather depressed at the upper part, transversely ribbed, ribs finely crenated, alternate ribs larger, double, upper ribs tuberculated; pale brown or ashy blue, variegated and streaked with darker brown; epidermis hairy and bristly; columella and interior of the aperture blood-red, profusely ornamented with strong white wrinkles; canal rather short.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 630.

Murex pilearis, Linnæus.

Lampusia pilearis, Schumacher.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

No one can fail to recognise this species by its blood-red mouth and by the hairy epidermis which appears on the back of the shell in longitudinal rows of bristly tufts.

Species 24. (Mus. Cuming.)

Triton aquatilis. *Trit. testâ fusiformi-turritâ, varicibus septem octove rotundis, prominentibus; spirâ elatâ; anfractibus convexis, transversim costatis, costis duplicibus, subdistantibus, liris undatis tuberculiferis longitudinaliter decussatis; pallidè rufescente-fuscâ, fusco maculatâ et variegatâ; columellâ et aperturæ fauce carneo-tinctis, albirugosis, labro intus albidenticulato; canali brevi, ascendente.*

The rippled Triton. Shell fusiformly turreted, with seven or eight round prominent varices; spire elevated; whorls convex, transversely ribbed, ribs double, rather distant, crossed longitudinally with waved tubercled ridges; pale reddish brown, blotched and variegated with brown; columella and interior of the aperture flesh-tinted and ornamented with white wrinkles, lip white, denticulated within; canal short, turned upwards.

Reeve, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

The longitudinal ridges waved which adorn the surface of this interesting species have, in the fine specimen before me, a beautiful ripple-like appearance which is very characteristic. The columella and interior are covered with enamel of a bright uniform flesh-tint, and the varices are very round and prominent. I have seen two or three examples of this species in different stages of growth, all exhibiting the above peculiarities with remarkable specific distinctness.

25

26

27

28a

28b

TAYLOR LIBRARY OF THE BOMBAY BRANCH OF THE ASIATIC SOCIETY

Sowerby, del. et lith.

TRITON.

PLATE VIII.

Species 25. (Mus. Cuming.)

TRITON CHLOROSTOMA. *Trit. testâ subtrigono-turritâ, crassiusculâ, varicibus senis prominentibus; spirâ elatâ; anfractibus irregulariter convolutis, supernè angulatis, ad angulum fortiter tuberculatis, transversim costatis, costis nodosis, varices super radiantibus, iris duabus intervenientibus; albidâ, aut griseo-cærulescente, fusco variè lineatâ et punctatâ; columellâ rufâ, albirugosâ; labro intus denticulato; aperturæ fauce rufâ.*

THE YELLOWISH-RED MOUTH TRITON. Shell somewhat triangularly turreted, rather thick, with six prominent varices; spire elevated; whorls irregularly convoluted, angulated at the upper part, strongly tubercled on the angle, transversely ribbed, ribs nodulous, radiating over the varices, with two ridges running between them; white or greyish blue, variously lineated and dotted with brown; columella yellowish red, more or less covered with white wrinkles; lip denticulated within; interior of the aperture yellowish red.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 636.

Hab. Island of Annaa (Chain Island), Pacific Ocean (found on the reefs); Cuming.

The whorls of this shell are very irregularly convoluted, and have almost a distorted appearance arising from their triangular structure.

Species 26. (Mus. Cuming.)

TRITON CYNOCEPHALUS. *Trit. testâ ovato-oblongâ, ventricosâ, varicibus duabus rotundis; spirâ subobtusodepressâ; anfractibus rotundis, supernè depressis, transversim costatis, costis crenulatis, subdistantibus, varices super prominentioribus, superis nodoso-tuberculatis, interstitiis elevato-striatis; rubido-fuscâ, varicibus albimaculatis; epidermide setosâ; columellâ rufâ, maculâ grandi nigricante-purpureâ, albirugosâ, ornatâ; labro fortiter dentato; aperturæ fauce rufâ; canali brevi, subcontorto.*

THE DOG'S-HEAD TRITON. Shell ovately oblong, ventricose, with two round varices; spire rather obtusely depressed; whorls round, depressed at the upper part, transversely ribbed, ribs crenulated, rather distant, more prominent over the varices, upper ribs nodosely tuberculated, interstices between the ribs carved with raised striæ; reddish brown, varices blotched with white; epidermis bristly; columella yellowish red, ornamented with a large blackish purple, white wrinkled spot; lip strongly denticulated; interior of the aperture reddish; canal short, somewhat contorted.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 633.

Hab. Island of Ticao, Philippines (found in coral sand at the depth of six fathoms); Cuming.

This species may be recognised by the dark purple spot upon the columella; the tubercles at the back are also of a peculiarly round nodulous character.

Species 27. (Mus. Cuming.)

TRITON TIGRINUS. *Trit. testâ trigono-fusiformi, rudi, solidâ, varicibus tribus plano-depressis; spirâ attenuatâ, mucronatâ; anfractibus lævi-costatis, costis anfractûs ultimi subobsoletis, anfractuum parte superiori angulatâ, tuberculis duabus vel tribus grandissimis ad angulum armatâ; croceo-fuscâ, varicibus labrique limbo nigro vel castaneo exiliter maculatis; epidermide corneâ, subfoliaceâ; columellâ lævi; aperturâ expansâ, fauce vividè aurantio-croceâ, strigis maculisque fuscis hinc illinc tinctâ; labri limbo undulato.*

THE TIGER-LIKE TRITON. Shell triangularly fusiform, rude, solid, with three flatly depressed varices; spire attenuated, pointed; whorls smooth, flat-ribbed, ribs of the last whorl almost obsolete, upper part of the whorls angulated, armed at the angle with two or three very large tubercles or humps; saffron-brown, varices and edge of the lip faintly spotted with black and chestnut; epidermis horny, rather foliaceous; columella smooth; aperture expanded, interior vividly coloured with orange-saffron, stained here and there with brown spots and streaks; edge of the lip waved.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Guacomayo, Central America (found in sandy mud at the depth of eleven fathoms); Cuming.

"This fine shell," says Mr. Broderip, "bears some

distant resemblance to *Triton femorale*, and there was a specimen in the Tankerville collection marked No. 1718 in the Catalogue as a variety of that species in these terms: *var. notabilis, latissima, aperturâ expansâ.* This resemblance is greater in dwarfs than in well-grown individuals; but the length and shape of the spire, the comparative smoothness, the breadth of the ventricose body-whorl, the expanded aperture with its rich orange mouth, variegated towards the border of the outer lip with dark chestnut stripes in pairs, and the shortness of the canal, indicate that *Triton tigrinus* is very distinct from *Triton femorale*; and Mr. Sowerby, who drew up the Tankerville Catalogue, is now of that opinion. The throat or internal part of the aperture is of a blueish white, and as in the rest of the species, the outer lip, and consequently the varices, acquire a greater thickness as the shell advances in age. The epidermis is peculiarly foliaceous upon the varices and edge of the outer lip."

Species 28. (Fig. *a* and *b*, Mus. Saul.)

Triton scrobiculator. *Trit. testâ subturritâ, infernè ventricosâ, varicibus undecim scrobiculatis; spirâ acuminatâ; anfractibus lævibus aut subtilissimè granulosis, obsoletè costatis, costis varices super tumidis; fulvâ, rufescente-fusco variegatâ; columellâ rugosâ, labro undulato, scrobiculato; aperturâ dilatatâ, fauce pallidè violaceâ; canali brevissimo.*

The furrowed Triton. Shell somewhat turreted, ventricose towards the lower part, with eleven furrowed or holed varices; spire acuminated; whorls smooth or very finely granulated, obsoletely ribbed, ribs swollen over the varices; yellowish, variegated with reddish brown; columella wrinkled, lip undulated, furrowed; aperture dilated, interior pale violet; canal very short.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 627.

Murex scrobiculator, Linnæus.

Ranella scrobiculator, Kiener, Sowerby.

Bufonaria pes-leonis, Schumacher.

Hab. Greece (found in rocky places).

This is one of those species which is exactly intermediate between the genera *Triton* and *Ranella*; I retain it, however, in the former genus on the testimony of Deshayes, who says "*pour nous, qui en avons vu l'animal, c'est un Triton.*"

29a

29b

30a

29c

29d

TRITON.

PLATE IX.

Species 29. (Fig. *a*, *b*, *c* and *d*, Mus. Cuming.)

TRITON RUBECULA. *Trit. testâ ovato-oblongâ, crassâ, varicibus senis prominentibus; spirâ obtusâ; anfractibus transversim granoso-liratis, tuberculo unico interdum, autem rarò, dorsim armatis, liris varices super duplicatis, interstitiis decussatim striatis; vividè aurantio-rubente, cingulâ angustâ aurantiâ infernè ornatâ, varicibus albimaculatis; columellâ rufâ, albirugosâ, aperturæ fauce albâ; labro solido, incrassato, margine intùs dentato.*

THE ROBIN-RED-BREAST TRITON. Shell ovately oblong, thick, with six prominent varices; spire obtuse; whorls transversely granulously ridged, sometimes, but rarely, armed at the back with a single blunt tubercle, ridges divided into two over the varices, interstices between the ridges decussately striated; bright orange-red, ornamented round the lower part with a narrow orange belt, varices spotted with white; columella red, crossed with white wrinkles, interior of the aperture white; lip solid, thickened, margin-toothed within.

Variety β. (Fig. *b* and *c*.)

Testa anfractibus medio lutescentibus, suprà et infrà fuscis.

Shell with the whorls pale yellow in the middle, and brown above and below.

Variety γ. (Fig. *d*.)

Testa vividè aurantia lirarum interstitiis nigerrimo-fuscis.

Shell bright orange, with the interstices between the ribs very dark brown, almost black.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 640.

Murex rubecula, Linnæus.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The three beautiful varieties of this species above enumerated are very distinctly figured by Martini (Conch., vol. iv. pl. 132. f. 1259 to 1267). The first variety (α) is of an uniform bright orange-red, with the varices ornamented with large blotches of pure white; the second variety (β) is belted with lemon-colour and brown; and the third variety (γ) is of bright orange, with all the interstices between the ridges blackish brown, excepting that one which corresponds with the orange belt in variety α.

Species 30. (Fig. *a*, Pl. IX., and Fig. *b*, Pl. X., Mus. Cuming.)

TRITON LAMPAS. *Trit. testâ ovato-conicâ, infernè ventricosâ, varicibus denis pluribusve, scrobiculatis; spirâ acuminato-turritâ; anfractibus supernè subangulatis, transversim liratis et costatis, liris costisque crispato-nodosis, valdè tuberculatis, tuberculis compressis, in seriebus duabus dispositis; albidâ, rufescente-fulvo tinctâ et variegatâ; columellâ subtilissimè rugosâ; canali breviusculo, contorto; labro denticulato, supernè fortiter canaliculato; columellâ et aperturæ fauce carneo-aurantiis, rubido interdum vividè tinctis.*

THE LAMP TRITON. Shell ovately conical, ventricose at the lower part, with ten or more holed varices; spire acuminately turreted; whorls somewhat angulated at the upper part, transversely ridged and ribbed, ribs and ridges knobbed in a rather irregular crisped manner, strongly tuberculated, tubercles compressed, arranged in two rows; whitish or cream-colour, stained and variegated with pale orange-brown; columella very finely wrinkled; canal very short, twisted; lip denticulated, strongly channeled at the upper part; columella and interior of the aperture fleshy orange, sometimes vividly stained with red.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 626.

Murex lampas, Linnæus.

Lampas hyans, Schumacher.

Hab. Philippine Islands (found on the reefs); Cuming.

This species, which is exceedingly variable in size, is remarkable for the channeled structure of the lip at its junction with the columella after the manner of that of the *Ranella bufonia*.

31a

31b

32

30b

33

TRITON.

PLATE X.

Species 31. (Fig. *a* and *b*, Mus. Cuming.)

TRITON TRILINEATUS. *Trit. testâ clavato-fusiformi, varicibus tribus; spirâ breviusculâ; anfractibus supernè angulatis, ad angulum compresso-tuberculatis, transversim plano-liratis, liris subtilissimè crenulatis, interstitiis lineis tribus elevatis sculptis; albidâ, fusco variegatâ, varicibus fusco-maculatis; columellâ lutescente-albâ, costatâ; canali subelongato, leviter ascendente; labro fortiter denticulato-costato; aperturæ fauce albâ.*

THE TRILINEATED TRITON. Shell clavately fusiform, with three varices; spire rather short; whorls angulated at the upper part, compressly tubercled at the angle, transversely flatly ridged, ridges very finely crenulated, interstices sculptured with three raised lines; whitish, variegated with brown, varices spotted or rather blotched with brown; columella yellowish white, ribbed across; canal rather elongated, slightly turned upwards; lip strongly denticulately ribbed within; interior of the aperture white.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

This is a strongly marked species, with the denticulated sculpture of the lip extending into the aperture after the manner of ribs; and the body of the shell is crossed by flattened ridges, between each of which are three very characteristic raised lines.

Species 32. (Mus. Cuming.)

TRITON OLEARIUM. *Trit. testâ fusiformi-turritâ, subventricosâ, varice unicâ; spirâ subobtuso-elatâ; anfractibus supernè plano-angulatis, ad angulum leviter tuberculatis, transversim costatis, costis latiusculis, prominentibus, subrugosis, costis interstitiisque elevato-striatis; rubido-fuscescente, varice fusco alboque alternatim maculatâ; columellâ purpureo-nigricante, albirugosâ; canali brevi; aperturæ fauce albâ; labro intus purpureo-nigricante, albidentato.*

THE OIL-VESSEL TRITON. Shell fusiformly turreted, rather ventricose, with a single varix; spire rather obtusely raised; whorls flatly angulated at the upper part, slightly tuberculated on the angle, transversely ribbed, ribs rather broad, prominent, somewhat wrinkled, ribs and the interstices between them sculptured with raised striæ; light reddish brown, varix alternately spotted with brown and white; columella purple-black, wrinkled with white; canal short; interior of the aperture white; lip purple-black within, toothed with white.

DESHAYES, Note in new edit. Anim. sans vert., vol. ix. p. 628 to 630.

Murex olearium, Linnæus.

Murex costatus, Born.

Murex parthenopus, Dillwyn.

Triton succinctus, Lamarck.

Hab. Mediterranean.

Variety β. (Fig. 32.)

Testa crassiuscula, solida; varicibus senis septemve, rotundissimis, prominentibus; costis minus elevatis, tuberculis fortioribus.

Shell rather thick, solid; varices six or seven in number, very round and prominent; ribs less elevated, tubercles stronger.

Hab. Island of Taheite, Pacific Ocean (found on the reefs); Cuming.

I quite agree with M. Deshayes in referring this species to the *Murex olearium* of Linnæus, but there is too strong an affinity between the Mediterranean and South Sea varieties to allow of their being described as separate species. The Mediterranean variety is a light shell with the tubercles but faintly developed, whilst the South Sea variety exhibits that higher condition of colour and sculpture which characterizes the conchology of a hotter climate; the shell is larger and more solid, the varices stronger and more numerous, and the purple-black colouring of the lip and columella is richer and more intense.

(Fig. 30 *b*, *Triton lampas*, see Pl. IX.)

Species 33. (Mus. Cuming.)

TRITON PYRUM. *Trit. testâ subpyriformi, ventricosâ, varicibus solidis quaternis; spirâ subobtuso-elatâ; anfractibus supernè angulatis, ad angulum compresso-tuberculatis, transversim costatis, costis planis, subobsoletis, interstitiis elevato-striatis; luteo-rubente,*

varicibus albo exiliter tinctis; columellâ aurantio-rubente, albirugosâ; canali subelongato, ascendente, contorto; aperturæ fauce cæruleo-albâ; labro intùs aurantio-rubente, fortiter albidentato.

The pear Triton. Shell pear-shaped, ventricose, with four solid varices; spire rather obtusely raised; whorls angulated at the upper part, compressly tubercled at the angle, transversely ribbed, ribs flat and rather obsolete, interstices sculptured with raised striæ; yellowish red, varices faintly stained in places with white; columella orange-red, wrinkled with white; canal rather long, twisted upwards; interior of the aperture bluish white; lip orange-red within, strongly toothed, teeth white.

Lamarck, Anim. sans vert., vol. ix. p. 633.

Murex pyrum, Linnæus.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

This species may be distinguished chiefly by its colour, which is a peculiarly bright orange-red.

34

35

36

37

38

Sowerby del. et lith.

TRITON.

PLATE XI.

Species 34. (Mus. Cuming.)

TRITON SCABER. *Trit. testâ ovatâ, varicibus tribus vel quaternis, subdepressis; spirâ mediocri; anfractibus convexis, longitudinaliter subobsoletè costatis, costis liris angustis, subacutis, alternis majoribus, cancellatis; albâ, epidermide crassâ, setosâ, indutâ; columellâ liratâ et granosâ; canali brevissimo, recurvo; aperturæ fauce albâ; labro intus obtusè denticulato.*

THE FURRED TRITON. Shell ovate, with three or four rather depressed varices; spire middling; whorls convex, longitudinally somewhat obsoletely ribbed, ribs cancellated with narrow, rather sharp ridges, the alternate of which are larger; white, covered over with a thick bristly epidermis; columella ridged and granulated; canal very short, recurved; interior of the aperture white; lip obtusely denticulated within.

KING, Zoological Journal, vol. v. p. 348.
Pollia scabra, Gray.

Hab. Valparaiso, South America; King (dredged from the depth of from seven to forty-five fathoms); Cuming.

This species may be easily recognised by its peculiarly bristly epidermis.

Species 35. (Mus. Cuming.)

TRITON CINGULATUS. *Trit. testâ ovato-pyriformi, ventricosâ, varice unicâ aut nullâ; spirâ subacuminatâ; anfractibus supernè indistinctè angulatis, ad angulum obsoletè nodulosis, liris planis equidistantibus undique cingulatis; aurantio-fuscescente; columellâ lævi; canali longiusculo, contorto; aperturâ inflatâ, fauce albâ; labro tenui, subfimbriato, aurantio denticulato.*

THE ENCIRCLED TRITON. Shell ovately pyriform, ventricose, with sometimes a single varix, sometimes none; spire somewhat acuminated; whorls indistinctly angulated at the upper part, obsoletely noduled on the angle, everywhere encircled with flat equidistant ridges; light orange-brown; columella smooth; canal rather long, twisted; aperture inflated, interior white; lip thin, slightly fimbriated, orange-toothed within.

PFEIFFER, Revue Cuviérienne, 1843.

DESHAYES, Note in new edit. Anim. sans vert., vol. ix. p. 643.
Cassidaria cingulata, Lamarck.
Triton undosus, Kiener (not of Lamarck).
Tritonium caudatum, Gray.

Hab. Island of Negros, Philippines; Cuming.

M. Deshayes having fully expatiated in the note above referred to, on the blunders committed by M. Kiener in regard to this shell, it is unnecessary to say anything further on the subject. Mr. Gray's name would have been maintained for this species if he had shown that this and not the *Triton canaliferus* is the *Buccinum caudatum* of Gmelin.

Species 36. (Mus. Burt.)

TRITON SPENGLERI. *Trit. testâ oblongo-ovatâ, planiusculo-compressâ, varicibus quinis tuberculiferis; spirâ rudi, obtuso-elatâ; anfractibus irregulariter convolutis, supernè angulatis, ad angulum tuberculatis, transversim costatis, costis grandibus, interstitiis excavatis, costâ minutâ medio decurrente, costis fortiter crenatis; spadiceo-fulvâ; columellâ albâ, lævi, callositate parvâ supernè munitâ; canali brevi, contorto; aperturæ fauce albâ; labro undulato, intus vix denticulato.*

SPENGLER'S TRITON. Shell oblong-ovate, rather flatly compressed, with five tubercled varices; spire rude, obtusely raised; whorls irregularly convoluted, angulated at the upper part, tuberculated on the angle, transversely ribbed, ribs large, interstices hollow, with a very small rib running through the centre, ribs strongly crenated; pale yellowish bay-colour; columella white, smooth, furnished with a small callosity at the top; canal short, twisted; interior of the aperture white; lip undulated, but slightly denticulated within.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 627.
Murex Spengleri, Chemnitz.

Hab. —— ?

The ribs in this species are exceedingly prominent on the varices, and they are well characterized by the peculiarly wrinkled or crenated style of the sculpture.

Species 37. (Mus. Metcalfe.)

Triton Chemnitzii. *Trit. testâ ovato-fusiformi, ventricosâ, tenuiculâ, varice unicâ; spirâ acuminato-turritâ; anfractibus supernè angulatis, ad angulum plus minusve subnodosis, concentricè subplicatis, transversim liratis, liris planiusculis, irregularibus, obsoletè nodosis; spadiceo-fulvâ, epidermide setosâ, concentricè plicatâ, indutâ, liris plus minusve lividopurpureis; columellâ purpureo tinctâ, albirugosâ; canali breviusculo, recurvo; aperturæ fauce cæruleo-albidâ; labro intus costellato-dentato, aurantio tincto.*

Chemnitz's Triton. Shell ovately fusiform, ventricose, rather thin, with a single varix; spire acuminately turreted; whorls angulated at the upper part, more or less slightly noduled on the angle, concentrically slightly plaited, transversely ridged, ridges rather flat, irregular, obsoletely noduled; yellowish bay, covered with a bristled, concentrically folded epidermis, ridges more or less stained with livid purple; columella stained with purple, covered with white wrinkles; canal rather short, recurved; interior of the aperture bluish white; lip toothed in a rib-like manner, orange.

Gray, Zoology of Beechey's Voyage, p. 110.

Argo-buccinum nodosum, Martini, vol. iv. pl. 131. f. 1256.

Cassidaria setosa, Hinds.

Hab. Panama (found in sandy mud at the depth of six fathoms); Cuming.

Mr. Gray appears to have overlooked the figure above referred to in Martini's portion of the 'Conchylien Cabinet,' or he would probably have dedicated the species to that illustrious author instead of his successor. The figure of Chemnitz's *Murex argus*, var., referred to by Mr. Gray, is the *Triton Tranquebaricus*.

Mr. Hinds refers this shell, as Lamarck did its next allied species (*Triton cingulatus*), to the genus *Cassidaria*; he does not, however, seem to have been acquainted either with Martini's figure or Mr. Gray's description and specific name.

Species 38. (Mus. Cuming.)

Triton gibbosus. For description see Plate XIV.

Species 39. (Mus. Cuming.)

Triton cutaceus. *Trit. testâ ovatâ, planiusculo-compressâ, varicibus quaternis quinisve tuberculiferis; spirâ obtusâ; anfractibus irregulariter convolutis, supernè angulatis, infra angulum tuberculis grandibus biseriatim armatis, transversim costatis, costis, nisi super varices, subobsoletis, crenulatis; spadiceo-fulvâ, cuticulâ corneâ indutâ; columellâ albâ, lævi, callositate parvâ supernè munitâ; canali brevi, profundè umbilicato; aperturæ fauce albâ; labro undulato, intus plus minusve denticulato.*

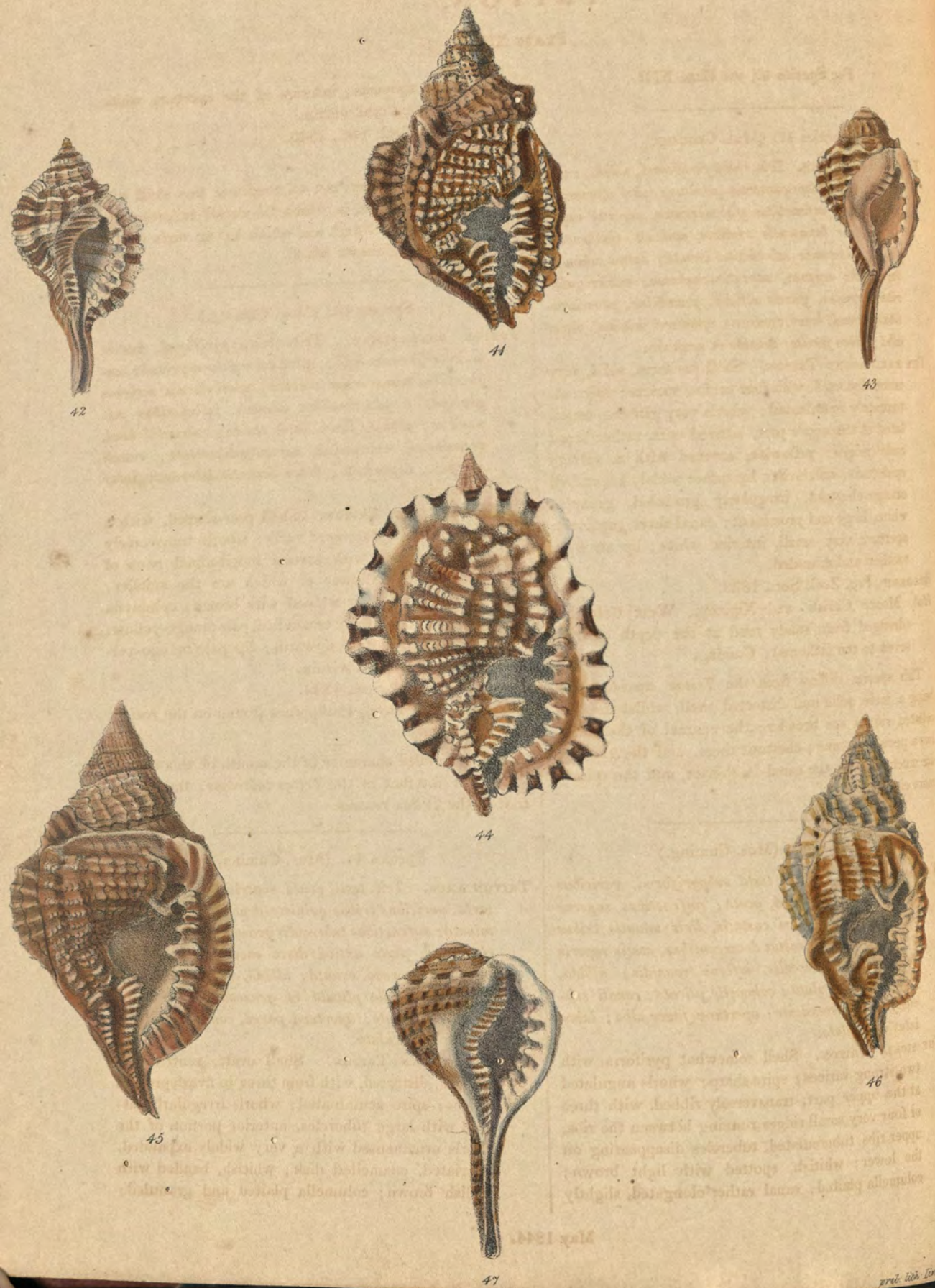
The cuticle-clad Triton. Shell ovate, rather flatly compressed, with four or five tubercled varices; spire obtuse; whorls irregularly convoluted, angulated at the upper part, armed with two rows of large tubercles beneath the angle, transversely ribbed, ribs, except in passing over the varices, almost obsolete, crenulated; yellowish bay-colour, covered with a horny cuticle; columella white, smooth, furnished with a small callosity at the upper part; canal short, deeply umbilicated; interior of the aperture white; lip undulated, more or less denticulated within.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 641.

Murex cutaceus, Linnæus.

Hab. Mediterranean, and Van Diemen's Island.

This species, an inhabitant of the Mediterranean, like the *Triton olearium*, is found in two very remote parts of the globe. It differs from the *Triton Spengleri* in the same manner that the *Triton grandimaculatus* differs from the *Triton lotorium*, namely, in the more elaborate character of the sculpture of the first two or three whorls; beyond that, the peculiarity is reversed, the difference between the last whorls of the *Tritones Spengleri* and *cutaceus* being, that in the latter species the ribs and crenulated sculpture are nearly obsolete.



prel. lith. Linn. imp.

TRITON.

PLATE XII.

For Species 40, see Plate XIII.

Species 41. (Mus. Cuming.)

TRITON CONSTRICTUS. *Trit. testâ fusiformi, solidâ, valdè distortâ, varicibus quaternis quinisve; spirâ attenuato-acuminatâ; anfractibus gibbosissimis, supernè angulatis, liris latiusculis rudibus nodosis clathratis; fulvâ, epidermide subvelutinâ indutâ; labro columellari latiùs expanso, aurantio-castaneo, subirregulariter granoso, granis albidis, grandibus, prominentibus; canali brevi, recurvo; aperturâ minimâ, fauce albâ; labro fortiter dentato et granoso.*

THE HARD-BOUND TRITON. Shell fusiform, solid, very much distorted, with four or five varices; spire attenuately acuminated; whorls very gibbous, angulated at the upper part, latticed with rather broad rude ridges; yellowish, covered with a velvety epidermis; columellar lip rather widely expanded, orange-chestnut, irregularly granuled, granules white, large and prominent; canal short, recurved; aperture very small, interior white; lip strongly toothed and granuled.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Monte Christi and Xipixapi, West Columbia (dredged from sandy mud at the depth of from seven to ten fathoms); Cuming.

This species differs from the *Triton cancellinus* in being a more solid and distorted shell, whilst the cancellated ridges are broader; the enamel of the mouth has a peculiar orange-chestnut tinge, and the granules are much larger; the canal is shorter, and the spire is more elevated.

Species 42. (Mus. Cuming.)

TRITON ÆGROTUS. *Trit. testâ subpyriformi, varicibus validis duabus; spirâ acutâ; anfractibus supernè angulatis, transversim costatis, liris minutis tribus vel quaternis inter costas decurrentibus, costis superis tuberculatis, tuberculis infernè evanidis; albidâ, fuscescente maculatâ; columellâ plicatâ; canali subelongato, subascendente; aperturæ fauce albâ; labro intus denticulato.*

THE SICKLY TRITON. Shell somewhat pyriform, with two strong varices; spire sharp; whorls angulated at the upper part, transversely ribbed, with three or four very small ridges running between the ribs, upper ribs tuberculated, tubercles disappearing on the lower; whitish, spotted with light brown; columella plaited; canal rather elongated, slightly turned upwards; interior of the aperture white; lip denticulated within.

REEVE, Pro. Zool. Soc., 1843.

Hab. China.

Care must be taken not to confound this shell with the *Triton trilineatus*, in which the dorsal tubercles are more strongly developed, and which has no varix on the back of the penultimate whorl.

Species 43. (Mus. Cuming.)

TRITON ENCAUSTICUS. *Trit. testâ pyriformi, varice unicâ depressiusculâ; spirâ rotundato-depressâ; anfractibus transversim costatis, tuberculorum seriebus plurimis longitudinalibus armatis, inferioribus minoribus; albidâ, fusco variè tinctâ; columellâ lævi, crassissimè encausticâ, aurantio-lutescente; canali elongato, ascendente; labro aurantio-lutescente, intus denticulato.*

THE ENAMELLED TRITON. Shell pear-shaped, with a single rather depressed varix; whorls transversely ribbed, armed with several longitudinal rows of tubercles, the lower of which are the smaller; whitish, variously stained with brown; columella smooth, very thickly enamelled, pale orange-yellow; canal long, turned upwards; lip pale orange-yellow, denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs); Cuming.

The enamelled character of the mouth of this shell is somewhat like that of the *Triton tuberosus*; the form is that of the *Triton retusus*.

Species 44. (Mus. Cuming.)

TRITON ANUS. *Trit. testâ ovatâ, ventricoso-gibbosâ, distortâ, varicibus tribus quinisve depressis; spirâ acuminatâ; anfractibus tuberculis grandibus irregulariter clathratis, parte anticâ disco encaustico fimbriato, latissimè expanso, ornatâ; albidâ, rubido-fusco fasciatâ; columellâ plicatâ et granosâ; canali brevi, subitò ascendente; aperturâ parvâ, coarctatâ; labro fortiter denticulato.*

THE OLD-WOMAN TRITON. Shell ovate, ventricosely gibbous, distorted, with from three to five depressed varices; spire acuminated; whorls irregularly latticed with large tubercles, anterior portion of the whorls ornamented with a very widely expanded, fimbriated, enamelled disk; whitish, banded with reddish brown; columella plaited and granuled;

canal short, suddenly turned upwards; aperture small, contracted; lip strongly denticulated.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 636.

Murex anus, Linnæus.

Distorta rugosa, Schumacher.

Cassis vera, Martini.

Hab. Ceylon: Philippine and Society Islands (found under stones at low water); Cuming.

This remarkable species is very generally and abundantly distributed throughout the intertropical regions.

Species 45. (Mus. Cuming.)

Triton cancellinus. *Trit. testâ elongato-ovatâ, subfusiformi, subdistortâ, varicibus quinis senisve subindistinctis; spirâ acuminatâ; anfractibus liris angustis elevatis, subdistantibus, eleganter clathratis, liris transversis duplicatis; albido-lutescente, epidermide sericâ indutâ; columellâ plicatâ et granosâ, rufescente-carneâ; canali breviusculo, subascendente; aperturâ coarctatâ; labro intus denticulato.*

The cancellated Triton. Shell elongately ovate, somewhat fusiform, a little distorted, with five or six rather indistinct varices; spire acuminated; whorls elegantly latticed with rather distant, narrow, elevated ridges, transverse ridges duplicate; whitish yellow, covered with a soft velvety epidermis; columella plaited and grained, reddish flesh-colour; canal rather short, turned a little upwards; aperture contracted; lip denticulated within.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 637.

Murex cancellinus, De Roissy.

Murex mulus, Dillwyn.

Triton clathratus, Lamarck.

Tritonium reticulare, Pfeiffer.

Hab. Ceylon: Philippine Islands (found in coral sand at the depth of six fathoms); Cuming.

Great confusion appears to have arisen amongst authors in deciding the name of this exceedingly common and well-known species.

Species 46. (Mus. Cuming.)

Triton ridens. *Trit. testâ elongato-ovatâ, subfusiformi, solidiusculâ, distortâ, varicibus quinis senisve subindistinctis; spirâ acuminatâ; anfractibus liris angustis elevatis prominentibus distantibus eleganter clathratis, liris transversis duplicatis; cærulescente-albâ, epidermide sericâ indutâ; columellâ fortiter rugosâ, aurantio tinctâ; canali breviusculo, vix ascendente; aperturâ parvâ, coarctatâ; labro intus fortiter dentato, albo, aurantio marginato.*

The laughing Triton. Shell elongately ovate, somewhat fusiform, rather solid, distorted, with five or six rather indistinct varices; spire acuminated; whorls elegantly latticed with prominent, narrow, raised ridges, transverse ridges duplicate; pale bluish white, covered with a velvety epidermis; columella strongly wrinkled, stained with orange; canal rather short, scarcely turned upwards; aperture small, contracted; lip strongly toothed within, white, bordered with orange.

Reeve, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

Although this species exhibits little more than a modification of the characters of the preceding, the difference is of good specific importance. The cancellated sculpture is wider and more prominent, whilst the ridges are more sharply noduled in crossing over each other. The wrinkles and denticulations which surround the aperture are much more strongly developed, and the orange-stained colouring of the enamelled disc is peculiarly characteristic.

Species 47. (Mus. Cuming.)

Triton retusus. *Trit. testâ claviformi, varice unicâ aut nullâ; spirâ brevissimâ, apice depresso-retuso; anfractibus subglobosis, supernè leviter angulatis, transversim exiliter costatâ, costis superis obtuso-nodulosis, inferioribus obsoletè nodulosis; albâ, rufescente-fusco tinctâ et variegatâ; columellâ rugosâ, labro columellari prominentè expansâ, solidiusculâ; canali elongato, recto, pergracili; labro externo intus dentato, dentibus quasi tumidis.*

The blunt Triton. Shell club-shaped, with one or no varix; spire very short, apex depressly blunt; whorls somewhat globose, slightly angulated at the upper part, transversely faintly ribbed, upper ribs obtusely noduled, lower ribs obsoletely noduled; white, stained and variegated with light reddish brown; columella wrinkled, columellar lip prominently expanded, rather solid; canal elongated, straight, very slender; outer lip toothed within, teeth as if swollen.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 635.

Hab. Ceylon.

This shell may be easily distinguished by its club-shape and very depressed, blunted spire. Besides the light brown with which the body of the shell is variegated, there are three dark brown spots on the marginal varix.

40

48 a

48 b

49

50 a

51

50 b

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del et lith.

prel. lith. Tarn. imp.

TRITON.

PLATE XIII.

Species 40. (Mus. Cuming.)

TRITON LIGNARIUS. *Trit. testâ globoso-pyriformi, solidiusculâ, varice nullâ; spirâ brevissimâ; anfractibus longitudinaliter subplicatis, transversim crenulato-liratis, liris angustis, alternis majoribus, fuscescentibus; luteo-castaneâ, epidermide villosâ reticulatâ indutâ; columellâ subexcavatâ, luteo-sanguineâ, albidenticulatâ, callositate albâ supernè armatâ; canali mediocri, subrecurvo; labro valdè incrassato, intus luteo-sanguineo, albidentato.*

THE WOODEN TRITON. Shell globosely pyriform, rather solid, without any varix; spire very short; whorls longitudinally plaited, transversely crenulately ridged, ridges narrow, alternate ones larger, brown; yellowish chestnut, covered with a hairy reticulated epidermis; columella slightly excavated, yellowish blood-red, denticulated with white, armed at the upper part with a white callosity; canal middling, a little recurved; lip very much thickened, yellowish blood-colour within, white-toothed.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Puerto Potrero, St. Elena, and Panama (found in sandy mud at a depth of from seven to twelve fathoms); Cuming.

This is a solid globose shell, remarkable for the blood-red colouring of the columella and outer lip.

Species 48. (Fig. *a* and *b*, Mus. Cuming.)

TRITON THERSITES. *Trit. testâ subfusiformi, varicibus quaternis; spirâ exsertâ; anfractibus transversim granoso-liratis, angulatis, ad angulum tuberculatis, tuberculis validis, valdè prominentibus, anfractuum totâ superficie subtilissimè granulosâ; columellâ albâ, subexcavatâ, leviter rugosâ, callositate supernè armatâ; canali longiusculo, subascendente; labro intus leviter denticulato.*

THE THERSITES TRITON. Shell somewhat fusiform, with four varices; spire exserted; whorls transversely granulously ridged, angulated at the upper part, tubercled on the angle, tubercles strong and very prominent, entire surface of the whorls very finely granulated; columella white, rather excavated, slightly wrinkled, armed at the upper part with a callosity; canal rather long, turned a little upwards; lip slightly wrinkled within.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

Several shells have been named after the rude enemy of Achilles as significant of their deformity. The *Triton* under consideration, though it has quite a hump-backed appearance from the prominence of the dorsal tubercles, is however beautifully granulated, the granulated ridges being especially neatly sculptured in passing over the tubercles and varices.

Species 49. (Mus. Cuming.)

TRITON MORITINCTUS. *Trit. testâ ovato-oblongâ, ventricosâ, varice unicâ elevatâ; spirâ depressâ; anfractibus supernè plano-angulatis, transversim crenulato-costatis, ad angulum fortiter tuberculatis, tuberculis acutis, infernè evanidis, transversim subtiliter sulcatis; rubidâ, varicibus albimaculatis; epidermide subsetosâ; columellâ rufo aurantiâ, maculâ grandi, nigricante-purpureâ, albirugosâ, tinctâ; canali subelongato, subcontorto; aperturæ fauce rufo-aurantiâ; labro intus fortiter dentato.*

THE MULBERRY-STAINED TRITON. Shell ovately oblong, ventricose, with a single raised varix; spire depressed; whorls flatly angulated at the upper part, transversely crenulately ribbed, strongly tubercled on the angle, tubercles sharp, disappearing towards the lower part, transversely very finely grooved; reddish, varices spotted with white; epidermis a little bristly; columella reddish orange, stained with a large white-wrinkled, blackish-purple spot; canal rather long, somewhat contorted; interior of the aperture reddish orange; lip strongly toothed within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

This shell, which is not uncommon in collections, approximates very closely to the *Triton cynocephalus*; it is however specifically distinct. The whorls of the *Triton moritinctus* are very strongly tubercled, the tubercles being disposed in waved longitudinal rows, whilst in the *Triton cynocephalus* the tubercles have more the appearance of regular nodules.

Species 50. (Fig. *a* and *b*, Mus. Cuming.)

Triton exaratus. *Trit. testâ subtrigono-fusiformi, varicibus duabus; spirâ elevato-turritâ; anfractibus supernè planissimo-angulatis, ad angulum subnodosis, transversim liratis, liris compressis, duplicatis, crenulatis, interstitiis excavato-sulcatis; albidâ, fuscescente cæruleoque variè tinctâ; columellâ albâ, subrugosâ; canali longiusculo; aperturâ rotundâ; labro intus dentato.*

The ploughed Triton. Shell somewhat triangularly fusiform, with two varices; spire elevately turreted; whorls very flatly angulated at the upper part, slightly knobbed on the angle, transversely ridged, ridges compressed, duplicate, crenulated, with the interstices excavately grooved; whitish, variegated with light brown and blue; columella white, slightly wrinkled; canal rather long; aperture round; lip toothed within.

Variety β. (Fig. 50 *b*.)

Testâ nigricante-fuscâ, albibalteatâ.

Shell blackish brown, belted with white.

Hab. North coast of New Holland.

This is a very characteristic species, with the transverse ridges standing out in bold relief, and the upper part of the whorls peculiarly flat and indented at the sutures.

Species 51. (Mus. Saul.)

Triton ficoides. *Trit. testâ trigono-ficiformi, varicibus quinis; spirâ brevi, obtusâ; anfractibus dorsim tumidiusculis, transversim liratis, liris nodosis, varices super duplicatis; columellâ nodosâ et rugosâ, infernè luteo-sanguineo tinctâ; canali brevi; labro intus fortiter dentato.*

The fig-like Triton. Shell triangularly fig-shaped, with five varices; spire short, obtuse; whorls rather swollen at the back, transversely ridged, ridges knobbed, duplicate on the varices; columella noduled and wrinkled, stained with yellowish blood-red towards the lower part; canal short; lip strongly toothed within.

Reeve, Pro. Zool. Soc., 1844.

Hab. Africa.

M. Kiener should have been sure of this shell being the *Ranella caudata* of Say, before he ventured to question the generic appropriation of that species. It is quite another thing, and I much doubt if a shell of such bright and vivid colour were ever found within the latitude of New York. The true *Ranella caudata* has many characters however in common with the Tritons, and I had myself erroneously figured it in Plate XV. of the genus (Fig. 57), before I felt satisfied that it really belonged to a small group of Ranellæ of which the *R. Muriciformis* is the type.

52 a

52 b

52 c

53

54 a

54 b

55

38 b

38 c

56

...el et lith.

TRITON.

PLATE XIV.

Species 52. (Fig. *a*, Mus. Metcalfe; Fig. *b* and *c*, Mus. Cuming.)

TRITON LABIOSUS. *Trit. testâ ovato-fusiformi, ventricosâ, varice unicâ aut nullâ; spirâ nunc abbreviatâ, obtusâ, nunc elevatâ; anfractibus supernè angulatis, transversim striatis et liratis, liris latiusculis, costis longitudinalibus decussatis; fuscâ vel cinereâ, fusco-tinctâ et maculatâ; columellâ subexcavatâ, albâ; canali brevi.*

THE FULL-LIPPED TRITON. Shell ovately fusiform, ventricose, with either one or no varix; spire sometimes short, obtuse, sometimes elevated; whorls angulated at the upper part, transversely striated and ridged, crossed with longitudinal ribs; brown or ash-colour, stained and spotted with brown; columella somewhat excavated, white; canal short.

WOOD, Index Testaceologicus, Supp., pl. 5. fig. 18.
Tritonium rutilum, Menke, Moll. Nov. Holl.

Hab. West coast of New Holland; Menke. Island of Luzon, Philippines (found under stones at low water); Cuming.

I am much indebted to my worthy friend Prof. Menke of Pyrmont for sending me a drawing of his *Tritonium rutilum*; I am unable however to maintain his specific name, in consequence of having identified it with several examples of the *Murex labiosus* of Wood. It is an exceedingly variable species, the spire being much more elevated in some specimens than in others.

Species 53. (Mus. Cuming.)

TRITON RUDIS. *Trit. testâ ovato-fusiformi, varicibus planulatis quinis senisve; spirâ subacuminatâ; anfractibus transversim elevato-striatis, longitudinaliter undulato-nodosis; fulvâ; columellâ albâ, subexcavatâ, infernè subobsoletè rugosâ; canali brevissimo, recurvo; aperturæ fauce albâ; labro simplici.*

THE RUDE TRITON. Shell ovately fusiform, with five or six flattened varices; spire somewhat acuminated; whorls transversely elevately striated, longitudinally undulately noduled; yellowish brown; columella white, slightly excavated, and rather obsoletely wrinkled at the lower extremity; canal very short, recurved; interior of the aperture white; lip simple.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Iquiqui, coast of Peru (found in mud and sand at a depth of from six to ten fathoms, and in coarse gravel at the depth of nine fathoms); Cuming.

This shell is exactly intermediate between *Triton* and *Buccinum*.

Species 54. (Fig. *a* and *b*, Mus. Norris.)

TRITON ACUMINATUS. *Trit. testâ subfusiformi, varice nullâ; spirâ acutissimè acuminatâ; anfractibus numerosis, transversim elevato-striatis, longitudinaliter costatis, costis subobliquis, crebriusculis; columellâ subtilissimè rugosâ; canali breviusculo, ascendente; aperturâ parvâ, rotundâ; labro intus denticulato.*

THE ACUMINATED TRITON. Shell somewhat fusiform, without any varix; spire very sharply acuminated; whorls numerous, transversely elevately striated, longitudinally ribbed, ribs somewhat oblique, rather close; columella very finely wrinkled; canal rather short, turned upwards; aperture small, round; lip denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. China.

The *Triton acuminatus* is another very aberrant form, though belonging to that interesting section of the genus of which the *Triton niveus* is the type.

Species 55. (Mus. Cuming.)

TRITON TRANQUEBARICUS. *Trit. testâ ovato-fusiformi, varicibus interdum tribus, interdum nullis; spirâ mediocri; anfractibus liris subprominentibus cingulatis, liris cæruleis aut fuscescentibus, sæpè duplicatis, plus minusve crenulatis et nodosis, remotiusculis, striâ unicâ elevatâ intercurrente; columellâ rugosâ; canali breviusculo; labro intus dentato, dentibus binis.*

THE TRANQUEBAR TRITON. Shell ovately fusiform, with sometimes three varices, sometimes none; spire middling; whorls encircled with prominent ridges, ridges bluish or light brown, often duplicate, more or less noduled and crenulated, rather distant, with a single raised stria running between them; columella wrinkled; canal rather short; lip toothed within, teeth arranged in pairs.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 642.

Murex argus fasciatus, Chemnitz, Conch. Cab., vol. x. pl. 160. f. 1522.

Triton balteatus, Beck.

Triton doliarius, var. Pfeiffer.

Hab. Coast of Tranquebar; Lamarck. Mouth of the Gambia, Africa (found in sandy mud in deep water).

I know of no species of Triton in which the number of varices is so variable as in the *Triton Tranquebaricus*. The specimen here figured from Mr. Cuming's collection, like that figured by M. Kiener, has no varix, whilst a fine example of the species from the collection of Thomas Norris, Esq., (vide Plate XX.) has three. I cannot discover the resemblance which M. Kiener describes between the *Tritones Tranquebaricus* and *cutaceus*, and M. Pfeiffer is decidedly mistaken in quoting the former as a variety of the *Triton doliarius*.

Species 38. (Fig. *a* (Pl. XI.), Fig. *b* and *c*, Mus. Cuming.)

Triton gibbosus. *Trit. testâ subtrigono-fusiformi, varicibus quaternis; spirâ elongato-turritâ, suturis profundis, irregularibus; anfractibus trigono-gibbosis, transversim creberrimè elevato-striatis, obsoletè liratis, liris exiliter nodosis aut verrucosis; fuscâ; canali breviusculo; aperturâ parvâ, rotundâ, fauce albâ; labro radiatim plano-expanso, intus denticulato.*

The hunchback Triton. Shell somewhat triangularly fusiform, with four varices; spire elongately turreted, sutures deep, irregular; whorls triangularly gibbous, encircled with very close, raised striæ, obsoletely ridged, ridges faintly noduled or warty; brown or yellowish brown; canal rather short; aperture small, round, interior white; lip radiately flatly expanded, denticulated within.

Broderip, Pro. Zool. Soc., 1844.

Hab. Panama and Monte Christi, West Columbia (found in coarse sand at the depth of seven fathoms); Cuming.

The form of this shell not much unlike that of "the finned frog" (*Ranella pulchra*) in all but the arrangement of the varices, there being considerable resemblance in the deeply indented sutures, the small round aperture, and in the flat, radiately expanded lip.

Species 56. (Mus. Cuming.)

Triton doliarius. *Trit. testâ rotundato-ovatâ, tenui, ventricosâ, varice nullâ; spirâ obtuso-depressâ; anfractibus supernè plano-angulatis, liris elevatissimis compressis cingulatis, liris striatis, crenulatis, nodosis, leviter undulatis, interstitiis profundè excavatis; spadiceâ aut fuscescente; columellâ albâ, lævi; canali brevissimo, umbilicato; aperturâ amplâ, fauce albâ; labro tenui, undato.*

The tun-shaped Triton. Shell rotundately ovate, thin, ventricose, without any varix; spire obtusely depressed; whorls flatly angulated at the upper part, encircled with very elevated, compressed ridges, ridges striated, crenulated, noduled, slightly undulated, interstices deeply excavated; light bay or brown; columella white, smooth; canal very short, umbilicated; aperture large, interior white; lip thin, festooned.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 641.

Murex doliarius, Linnæus.

Hab. Cape of Good Hope.

A light, inflated shell, of very peculiar, Dolium-like growth, exhibiting very little character in common with the rest of the Tritons.

57

58a

58b

59

60a

60b

60c

61a

61b

62

TRITON.

PLATE XV.

For Species 57 see Plate XVI.

Fig. 57. *Ranella caudata*, Say, see RANELLA, Pl. VII.

Species 58. (Fig. *a* and *b*, Mus. Cuming.)

TRITON GRACILIS. *Trit. testâ gracili-fusiformi, varicibus tribus; spirâ subelatâ; anfractibus tuberculato-nodosis, liris parvis subtiliter decussatis; lutescente-albâ, vel fuscâ, albibalteatâ, epidermide tenui subsetosâ indutâ; columellâ fortiter rugosâ, albâ; canali subelongato, ascendente; aperturæ fauce albâ; labro intus peculiariter rugoso-denticulato.*

THE SLENDER TRITON. Shell slenderly fusiform, with three varices; spire somewhat raised; whorls tubercularly knobbed, finely decussated with small ridges; yellowish white, or brown with a white belt, covered with a thin, slightly bristly epidermis; columella strongly wrinkled, white; canal rather elongated, turned upwards; interior of the aperture white; lip peculiarly rugosely denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

A delicate little species, in which the outer lip is peculiarly fully wrinkled within.

Species 59. (Mus. Cuming.)

TRITON ELONGATUS. *Trit. testâ elongato-fusiformi, varice unicâ subindistinctâ; spirâ acuminatâ; anfractibus supernè leviter angulatis, transversim liratis et striatis, liris striisque granuloso-crenatis, equidistanter nodulosis; cinereâ, liris livido-purpureis; columellâ excavatâ, rugosâ, callositate supernè armatâ; canali elongato, subcontorto; labro intus dentato, dentibus binis.*

THE ELONGATED TRITON. Shell elongately fusiform, with a single somewhat indistinct varix; spire acuminated; whorls slightly angulated at the upper part, transversely ridged and striated, ridges and striæ granulously crenated, equidistantly noduled; ash-colour; ridges livid purple; columella excavated, wrinkled, armed with a callosity at the upper part; canal elongated, a little twisted; lip toothed within, teeth ranged in pairs.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

This shell approximates very closely to the *Triton vespaceus*; so closely indeed, that I may be thought rather venturous to describe it as a new species. The differences however are as follows: the canal is much more elongated, the whorls are not tubercled, and the beaded ridges are of a peculiar livid-purple colour.

Species 60. (Fig. *a*, *b* and *c*, Mus. Cuming.)

TRITON GEMMATUS. *Trit. testâ elongato-oblongâ, varicibus quaternis quinisve; spirâ subobtusâ; anfractibus liris, pulcherrimè gemmatis, cingulatis, interstitiis striis elevatis longitudinalibus et transversis eximiè clathratis; aurantio-lutescente; columellâ rugosâ, callositate supernè armatâ; canali breviusculo; labro intus dentato, dentibus binis.*

THE BEADED TRITON. Shell elongately oblong, with four or five varices; spire somewhat obtuse; whorls encircled with very beautifully beaded ridges, interstices delicately latticed with raised transverse and longitudinal striæ; orange-yellow; columella wrinkled, armed at the upper part with a callosity; canal rather short; lip toothed within, teeth ranged in pairs.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

Variety β. (Fig. 60 *c*.)

Testâ albâ, varicibus duabus ad senas; liris subnodosis.

Shell perfectly white, with from two to six varices; ridges slightly knobbed.

Hab. Island of Annaa (Chain island), South Pacific Ocean, and island of Burias, Philippines (found under stones in both localities at low water); Cuming.

REEVE, Pro. Zool. Soc., 1844.

The sculpture of this shell is very similar to that of the *Triton rubecula*; the beaded ridges are however wider apart, and, on the varices, they have three smaller ridges between them.

Species 61. (Mus. Hanley.)

TRITON VESPACEUS. *Trit. testâ abbreviato-fusiformi, subtrigonâ, varice unicâ; spirâ acuminatâ; anfractibus supernè concavo-depressis, transversim crenulato-liratis, liris duabus superis tuberculato-nodosis, inter-*

stitiis striis elevatis decussatis; cinereo-cærulescente, aut fuscâ cinereo balteatâ; columellâ rugosâ, callositate supernè armatâ; canali mediocri; labro intus dentato, dentibus binis.

The wasp-like Triton. Shell shortly fusiform, somewhat triangular, with a single varix; spire acuminated; whorls concavely depressed at the upper part, transversely crenulately ridged, the two uppermost ridges tuberculously knobbed, interstices between the ridges decussated with raised lines; ashy blue, or brown with a light ash-coloured belt; columella wrinkled, armed at the upper part with a callosity; canal middling; lip toothed within, teeth ranged in pairs.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 636.

Hab. New Holland; Menke.

This is a very characteristic little species, and may be recognized without much difficulty.

Species 62. (Mus. Cuming.)

Triton amictus. *Trit. testâ fusiformi, subpyriformi, varicibus duabus; spirâ acuminatâ; anfractibus tuberculato-nodosis, transversim liratis et striatis, liris planulatis, subobsoletis; albidâ, epidermide molli sparsim setosâ amictâ; columellâ leviter rugosâ; canali subelongato; aperturæ fauce albâ; labro intus denticulato.*

The well-clad Triton. Shell fusiform, somewhat pear-shaped, with two varices; spire acuminated; whorls tubercularly knobbed, transversely ridged and striated, ridges flat, rather obsolete; whitish, clad in a soft sparingly bristled epidermis; columella here and there wrinkled; canal rather elongated; interior of the aperture white; lip denticulated within.

Reeve, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

This is quite a distinct species from the preceding; the shell is of a more pyriform shape, and the sculpture is of a much less elaborate character.

57 a

63

57 b

64

65 a

65 b

66

Sowerby del. et lith.

prov. lith. Linn. imp.

TRITON.

PLATE XVI.

Species 57. (Fig. *a* and *b*, Mus. Cuming.)

TRITON CLATHRATUS. *Trit. testâ interdum oblongo-, interdum abbreviato-turritâ, crassâ, varicibus undecenis; spirâ acuminatâ; anfractibus liris subprominentibus creberrimè clathratis, liris ad decussationem fortiter granulosis; albidâ aut fuscescente, fusco balteatâ et maculatâ; columellâ subrugosâ; canali brevissimo, recurvo; labro intùs denticulato.*

THE LATTICED TRITON. Shell sometimes oblong, sometimes shortly turreted, thick, with about eleven varices; spire acuminated; whorls closely latticed with rather prominent ridges, ridges strongly granulated at the point of crossing; whitish or brownish, belted and spotted with brown; columella slightly wrinkled; canal very short, recurved; lip denticulated within.

SOWERBY (not Lamarck), Pro. Zool. Soc., 1833.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

It was very injudicious, to say the least of it, of Mr. Sowerby to distinguish this shell by a name which had been used by Lamarck and long commonly adopted, in reference to a well-known species of the grimace Tritons; it has however been lately shown by M. Deshayes, that the *Triton clathratus* of Lamarck was originally published by De Roissy with the specific title of *cancellinus*.

Species 63. (Mus. Cuming.)

TRITON OBSCURUS. *Trit. testâ elongato-turritâ, varicibus undecenis; spirâ acuminatâ; anfractibus transversim granulosis, longitudinaliter subobsoletè sulcatis, sulcis creberrimis; fuscescente, fusco pallidè balteatâ, maculis fuscis quadratis perpaucis seriatim pictâ, varicibus fusco maculatis; columellâ lævi, crassissimè encausticâ; canali brevissimo, labro intùs denticulato.*

THE OBSCURE TRITON. Shell elongately turreted, with eleven varices; spire acuminated; whorls transversely granulated, longitudinally rather obsoletely grooved, grooves very close-set; light brown, pàlely belted with brown, painted with a very few square brown spots in rows, varices spotted with brown; columella smooth, very thickly enamelled; canal very short, lip denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. East Indies; Lieut. Babb.

This shell may have been probably confounded with the *Triton maculosus*; it differs however in not being transversely grooved, in having a different arrangement of the varices, and in other minor particulars.

Species 64. (Mus. Stainforth.)

TRITON MACULOSUS. *Trit. testâ oblongo-turritâ, crassâ, solidâ, varicibus quaternis; spirâ obtuso-acuminatâ; anfractibus liris angustis subprominentibus creberrimè clathratis, liris ad decussationem fortiter granulosis, interstitiis subtilissimè striato-cancellatis; albidâ, fusco et aurantio-fuscescente variè tinctâ et maculatâ; columellâ lævi, callositate supernè armatâ, encausticâ latissimè expansâ; canali brevissimo, recurvo; labro intùs denticulato.*

THE SPOTTED TRITON. Shell oblong-turreted, thick, solid, fourteen varices; spire obtusely acuminated; whorls very closely latticed with rather prominent ridges, strongly granulated at the point of crossing, the interstices being extremely finely cancellated with raised striæ; whitish, variously stained and spotted with brown and light orange-brown; columella smooth, armed with a callosity at the upper part, enamel very widely spread; canal very short, recurved; lip denticulated within.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 639.

Buccinum maculosum, Martini.

Murex maculosus, Gmelin.

Colubraria granulata, Schumacher.

Hab. Island of Ticao, Philippines (found amongst coral sand in deep water); Cuming.

If Lamarck had looked upon the two excellent figures in the 'Conchylien Cabinet,' to which he refers for this species, with the same discrimination as Mr. Sowerby has done, he would have discovered that the shell figured by Chemnitz in the tenth volume, pl. 162. f. 1552 and 1553, is quite a distinct species from that figured by Martini in the fourth volume, pl. 132. f. 1257 and 1258. Our contemporary, however, possessed an advantage in having specimens for comparison which his predecessor might not have had; and a conchological iconographer of the present day, who had long the care of

Lamarck's collection, seems to have been no less unfortunate.

Species 65. (Fig. *a* and *b*, Mus. Stainforth.)

Triton Soverbii. *Trit. testâ elongato-turritâ, crassâ, solidâ, varicibus quindenis planiusculis; spirâ acuminatâ; anfractibus longitudinaliter creberrimè subobsoletè sulcatis, granulis seriatim dispositis, lineisque brunneis excavatis, binis, undique cingulatis; aurantio-fuscescente, fusco variegatâ, macularum fuscarum seriebus duabus distantibus ornatâ; columellâ lævi, callositate supernè armatâ, encausticâ latissimè expansâ; canali brevissimo, labro intùs subtilissimè denticulato.*

Sowerby's Triton. Shell elongately turreted, thick, solid, with fifteen rather flattened varices; spire acuminated; whorls longitudinally very closely rather obsoletely grooved, everywhere encircled with rows of granules, and brown excavated lines, ranged two and two; orange-brown, variegated with brown, and ornamented with two distant rows of square brown spots; columella smooth, armed with a callosity at the upper part, the enamel being very widely expanded; canal very short, lip very finely denticulated.

Triton lineatus, Sowerby (not Broderip), Pro. Zool. Soc., 1833.

Hab. Gallapagos Islands, Pacific Ocean (found in sandy mud at the depth of six fathoms); Cuming.

I dedicate this shell with a great deal of pleasure to Mr. Sowerby, because he was the first to distinguish it in a proper manner from the preceding species, with which it was confounded by Lamarck. Chemnitz published a very accurate figure of it in the 'Conchylien Cabinet,' vol. x. pl. 162. f. 1552 and 1553, as a most elegant species of spotted Murex, "*Species elegantissima Muricis maculati*," and the vivid dark brown lines which encircle its entire surface in pairs render it not unworthy of the title.

The name selected by Mr. Sowerby for this interesting shell was applied by Mr. Broderip only a few months before to another species (vide Sp. 4), the description of which was probably not in type.

Species 66. (Mus. Cuming.)

Triton distortus. *Trit. testâ oblongo-turritâ, crassâ, solidâ, varicibus novenis obliquè invicem subsequentibus; spirâ peculiariter tortuosâ; anfractibus seriatim creberrimè granulosis, juxta suturam granoso-crenulatis, infra impresso-lævibus; roseo-albicante, fusco variè maculatâ et nebulosâ; columellâ lævi, encausticâ expansâ, subgranosâ; canali brevissimo; labro intùs subtilissimè denticulato.*

The distorted Triton. Shell oblong-turreted, thick, solid, with nine varices obliquely following one under the other; spire peculiarly twisted; whorls covered with close-set rows of granules, granulously crenulated next the suture, impressly smooth immediately under; pinkish white, variously spotted and clouded with brown; columella smooth, enamel spread over, slightly granulous; canal very short; lip very finely denticulated within.

Schubert and Wagner, Conchylien Cab. (Martini and Chemnitz), Supp., p. 138. pl. 231. f. 4074 and 4075.

Sowerby, Pro. Zool. Soc., 1833.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

Mr. Sowerby seems not to have been aware that this curiously distorted shell was described, four years before the publication of his account of it, by Schubert and Wagner; as however, singularly enough, he applied the same name to it, all confusion has been fortunately avoided.

67

68

69

70

71

72

73

74a

74b

75

TRITON.

PLATE XVII.

Species 67. (Mus. Cuming.)

TRITON PYGMÆUS. *Trit. testâ oblongo-turritâ, subcompressâ, varicibus undecim, interdum utroque invicem subsequentibus, interdum irregularibus; spirâ acuminatâ; anfractibus longitudinaliter creberrimè liratis, liris granulosis; fuscâ, interdum stramineo pallidè balteatâ; columellâ lævi, canali brevissimo.*

THE PYGMY TRITON. Shell oblong-turreted, somewhat compressed, with eleven varices, sometimes following one under the other on each side, sometimes irregular; spire acuminated; whorls longitudinally very closely ridged, ridges granulated; brown, sometimes belted with pale straw-colour; columella smooth, canal very short.

PFEIFFER, Revue Soc. Cuvierienne, 1843, p. 136.

Ranella pygmæa, Lamarck.

Ranella lanceolata, Philippi (not of Menke).

Hab. Mediterranean, coast of Malta (under stones).

I refer this shell to the genus *Triton* according to Pfeiffer, first on account of its immediate affinity with the *Triton reticulatus* and other turriculated species of the genus, and secondly on account of the irregular disposition of the varices, which do not always exhibit that complete lateral arrangement characteristic of the *Ranellæ*.

Species 68. (Mus. Cuming.)

TRITON CRISPUS. *Trit. testâ ovatâ, subfusiformi, varicibus duabus vel tribus; spirâ breviusculâ; anfractibus liris crispis prominentibus, subdistantibus, decussatis, liris ad decussationem nodulosis, interstitiis striis crispis elevatis subtilissimè cancellatis; cinereo-cærulescente, varicibus lirisque albidis; columellâ excavatâ, rugosâ, callositate supernè armatâ; canali breviusculo; labro intus fortiter denticulato.*

THE CRISPED TRITON. Shell ovate, somewhat fusiform, with two or three varices; spire rather short; whorls crossed with rather distant prominent crisped ridges, ridges nodulous at the point of crossing, interstices very finely cancellated with crisped raised striæ; ashy blue, varices and ridges white; columella excavated, wrinkled, armed at the upper part with a callosity; canal rather short; lip strongly denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

Quite distinct from any hitherto described species.

Species 69. (Mus. Cuming.)

TRITON EBURNEUS. *Trit. testâ ovato-oblongâ, varicibus tribus vel quaternis remotiusculis; spirâ brevi; anfractibus liris parvis obtusis creberrimè decussatis; intus extusque albâ; columellâ excavatâ, infernè subrugosâ; canali brevissimo; labro intus denticulato.*

THE IVORY TRITON. Shell ovately oblong, with three or four rather remote varices; spire short; whorls very closely decussated with small obtuse ridges; white within and without; columella excavated, slightly wrinkled at the lower part; canal very short; lip denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

This shell has somewhat the form of the *Triton Quoyi* (Sp. 93), an interesting little New Holland species, which M. Kiener thought to be the recent analogue of Lamarck's fossil *Triton viperinum*.

Species 70. (Mus. Cuming.)

TRITON NITIDULUS. *Trit. testâ elongato-turritâ, crassâ, solidâ, varicibus duodecim aut tredecim, planulatis; spirâ subcontortâ; anfractibus lævibus, nitidis, lineis elevatis, subtilissimis, granulosis, subdistantibus, cingulatis, juxta suturam eximiè crenulatis; fuscescente, saturatiùs balteatâ et alternatim maculatâ; columellâ lævi, callositate supernè armatâ, encausticâ latè expansâ; canali brevissimo, recurvo.*

THE POLISHED TRITON. Shell elongately turreted, thick, solid, with twelve or thirteen flattened varices; spire slightly twisted; whorls smooth, polished, encircled with rather distant, very fine, granulated, raised lines, delicately crenulated next the suture; light brown, belted and spotted alternately with darker brown; columella smooth, armed at the upper part with a callosity, enamel widely spread; canal very short, recurved.

SOWERBY, Pro. Zool. Soc., 1844.

Hab. Island of Annaa, Pacific Ocean.

This shell may be easily recognised by the very delicate chains of fine granules with which it is encircled at comparatively rather distant intervals.

Species 71. (Mus. Cuming.)

TRITON VERRUCOSUS. *Trit. testâ subpyramidali-oblongâ, varicibus quatuor quinisve; spirâ mediocri; anfractibus supernè impressis, transversim striatis et liratis, liris longitudinalibus prominentioribus decussatis, ad decussationem nodosis; aurantio-fuscescente, anfractuum parte inferiori fusco, inter nodos articulatâ; columellâ excavatâ, vix rugosâ; canali brevissimo.*

THE WARTED TRITON. Shell somewhat pyramidally

oblong, with four or five varices; spire middling; whorls impressed at the upper part, transversely striated and ridged, decussated with larger and more prominent longitudinal ribs, noduled at the point of crossing; orange-brown, lower portion of the whorls articulated with brown between the nodules; columella excavated, scarcely wrinkled; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

Care must be taken not to confound this shell with the lesser New Holland species, *Triton Quoyi*.

Species 72. (Mus. Cuming.)

TRITON RETICULATUS. *Trit. testâ elongato-turritâ, varicibus undecim aut duodecim; spirâ acutâ; anfractibus creberrimè reticulatis; fuscescente, fusco variè tinctâ; columellâ excavatâ, lævi; canali brevissimo, recurvo.*

THE RETICULATED TRITON. Shell elongately turreted, with eleven or twelve varices; spire sharp; whorls very closely reticulated; light brown, variously stained with brown; columella excavated, smooth; canal very short, recurved.

DE BLAINVILLE, Faune Française, pl. 4. D. f. 5.

DESHAYES, Lamarck, Anim. sans vert. (2nd edit.), vol. ix. p. 646.

Murex reticulatus?, Dillwyn.

Triton turriculatus, Deshayes (Exp. Morée).

Tritonium intertextum?, Pfeiffer.

Triton reticulatus, *Triton Mediterraneus*, } Sowerby.

Hab. Mediterranean, Gallapagos Islands, &c.

After attentively comparing the specimens described by Sowerby under the respective titles of *Tritones reticulatus* and *Mediterraneus*, I am unable to discover any specific difference between them.

Species 73. (Mus. Hanley.)

TRITON CEYLONENSIS. *Trit. testâ gracili-turritâ, subdistortâ, varicibus rudibus ad duodecim planulatis; spirâ acuminatâ, subtortuosâ; anfractibus liris longitudinalibus creberrimis subindistinctis, subtilissimè granulosis, sculptis; roseo-albicante, fuscescente eximiè balteatâ, maculatâ, et variè tinctâ; columellâ excavatâ, politâ; canali brevissimo, recurvo.*

THE CEYLON TRITON. Shell slenderly turreted, somewhat distorted, with about twelve rude, flattened varices; spire acuminated, a little twisted; whorls sculptured with very finely granulated, rather indistinct, close-set, longitudinal ridges; pinkish white, belted, spotted, and variously stained with light brown; columella excavated, polished; canal very short, recurved; lip denticulated within.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Island of Ceylon.

The granules in this species are close-set, but of the same fine, delicate character as those of the *T. nitidulus*.

Species 74. (Fig. *a* and *b*, Mus. Cuming.)

TRITON TORTUOSUS. *Trit. testâ oblongo-turritâ, subangustâ, varicibus octo obliquè invicem subsequentibus; spirâ tortuosâ; anfractibus granulis parvis subtiliter reticulatis; lutescente, maculis fuscis grandibus, longitudinaliter undatis, eleganter pictâ; columellâ excavatâ, subgranulosâ; canali brevissimo, recurvo.*

THE TWISTED TRITON. Shell oblong-turreted, rather narrow, with eight varices obliquely following one under the other; spire twisted; whorls finely reticulated with small granules; yellowish, elegantly painted with large longitudinally-waved brown spots; columella excavated, slightly granuled; canal very short, recurved.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

This interesting species approximates very closely to the *Triton distortus*; it differs in being of a more delicate and slender form, in the granules being less prominent, and in the peculiar waved style of the painting.

Species 75. (Mus. Cuming.)

TRITON NIVEUS. *Trit. testâ rotundato-ovatâ, varicibus senis septemve indistinctis; spirâ acuminatâ, acutâ; anfractibus ventricosis, liris prominentibus reticulatis, longitudinalibus concentricis latioribus; laminâ columellari tenui, striatâ; nivea; canali brevi, tortuoso-recurvo; labro tenui; aperturæ fauce elevato-striatâ.*

THE SNOW-WHITE TRITON. Shell rotundately ovate, with six or seven indistinct varices; spire acuminated, sharp; whorls ventricose, reticulated with prominent ridges, of which the longitudinal are concentric and wider apart; snowy white; columellar lamina thin, striated; canal short, recurved in a twisted manner; lip thin; interior of the aperture elevately striated.

PFEIFFER, Revue Soc. Cuvierienne, 1843, p. 139.

Buccinum niveum, GMELIN.

Nassa alba, recurvirostris, &c., Martini.

Hab. ——?

It would have perhaps been more correct if Pfeiffer had adopted the specific name of *albus* for this little species of Triton, but as Martini's nomenclature is so immethodical, I think its priority unimportant.

76

77

78

79

antiquatus

80

81

82

trincatus

83

84

85

LIBRARY OF THE ROYAL ASIATIC

Sowerby del et lith.

TRITON.

PLATE XVIII.

(Figures considerably magnified.)

Species 76. (Mus. Cuming.)

TRITON SCULPTILIS. *Trit. testâ oblongo-turritâ, varice nullâ; spirâ exsertâ; anfractibus longitudinaliter costellatis, costellis angustis, interstitiis striis elevatis cancellatis, anfractûs ultimi parte inferiori conopeo carinæformi prominente peculiariter ornatâ; albidâ, suturis fuscis; columellâ lævi; canali brevissimo.*

THE CARVED TRITON. Shell oblong-turreted, with no varix; spire exserted; whorls longitudinally ribbed, ribs narrow, interstices cancellated with raised striæ, lower portion of the last whorl peculiarly ornamented with a prominent keel-shaped canopy; whitish, sutures brown; columella smooth; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

In addition to the above account of this beautiful species, it may be noticed that the transverse striæ are brown upon the ribs and white in the interstices; the sutures are brown in consequence of the whorls being encircled with a brown line just at the point where one whorl lodges in its spiral growth upon the other, over the basal canopy, as if to mark out the exact plan of convolution.

Species 77. (Mus. Cuming.)

TRITON EXIMIUS. *Trit. testâ oblongo-turritâ, varice nullâ; spirâ acuminatâ; anfractibus costellis minutis eximiè cancellatis, longitudinalibus majoribus, valdè remotioribus; albâ, fuscescente obscurè fasciatâ; canali brevissimo.*

THE DELICATE TRITON. Shell oblong-turreted, with no varix; spire acuminated; whorls delicately cancellated with minute ribs, of which the longitudinal are larger and much wider apart; white, obscurely banded with very light brown; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Lord Hood's Island, Pacific Ocean (on the reefs), and Island of Capul, Philippines (under stones at low water); Cuming.

A neatly cancellated, almost colourless, shell.

Species 78. (Mus. Cuming.)

TRITON EGREGIUS. *Trit. testâ elongato-ovatâ, varice nullâ; spirâ acutâ; anfractibus longitudinaliter costatis, striis elevatis transversis cancellatis; albâ, costis medio albis, suprà et infrà fuscis; canali brevi, recurvo.*

THE CHOSEN TRITON. Shell elongately ovate, with no varix; spire acute; whorls longitudinally ribbed, cancellated with transverse raised striæ; white, ribs white in the middle, brown above and below; canal short, recurved,

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

The style and arrangement of the sculpture is not much unlike that of the preceding species; the shell is however larger, more globose, and has a very pretty appearance, arising from the dark brown upper and lower portions of the ribs being crossed by white striæ.

Species 79. (Mus. Cuming.)

TRITON LANCEOLATUS. *Trit. testâ elongato-turritâ, varicibus octo, longitudinaliter obliquè costellatâ, costellis minutis, confertis, striis elevatis transversis subtilissimè cancellatis; roseo-albicante, aurantio-fusco sparsim maculatâ; canali brevissimo.*

THE LITTLE LANCE-LIKE TRITON. Shell elongately turreted, with eight varices, longitudinally obliquely ribbed, ribs very small, close-set, very finely cancellated with raised transverse striæ; pinkish white, blotched here and there with light orange-brown; canal very short.

KIENER, Iconographie des coquilles, pl. 18. f. 1.

DESHAYES, Lamarck, Anim. sans vert. (2nd edit.), vol. ix. *Ranella lanceolata*, Menke (not Philippi).

Hab. West Indies.

This species is of much more common occurrence than either of the two following, which, though so nearly allied, are peculiarly distinct.

Species 80. (Mus. Cuming.)

TRITON ANTIQUATUS. *Trit. testâ elongato-turritâ, varicibus novenis; spirâ acuminatâ; anfractibus subirregulariter convolutis, longitudinaliter subtilissimè costellatis, costellis irregularibus, nunc obliquis, nunc subundulatis, juxta suturam peculiariter mucronatis, striis transversis undique sculptis; roseo-albicante, semipellucidâ, varicibus aurantio-fusco medio unimaculatis; canali brevissimo; aperturæ fauce purpureâ.*

THE ANTIQUATED TRITON. Shell elongately turreted, nine varices; spire acuminated; whorls somewhat irregularly convoluted, longitudinally very finely ribbed, ribs irregular, now oblique, now a little waved, peculiarly pointed next the suture, everywhere engraved with fine transverse striæ; pinkish white, semitransparent, varices marked in the middle with a single orange-brown spot; canal very short; interior of the aperture tinged with purple.

Hinds, Zoology of the Sulphur, vol. ii. pl. 4. fig. 78.
Hab. New Ireland (among coarse sand at low water); Hinds.

This shell is distinguished from the preceding species by its having one more whorl, in being of a lighter and more delicately transparent character, and by the peculiar manner in which the longitudinal ribs are extended to a point across the suture.

Species 81. (Mus. Cuming.)

Triton siphonatus. *Trit. testâ fusiformi-turritâ, varicibus novenis, subindistinctis; spirâ acuminatâ; anfractibus creberrimè reticulatis, ultimo anticè quasi siphonato; roseo- aut cæruleo-albidâ, aurantio-fusco sparsim maculatâ; laminâ columellari tenui, lævi; aperturâ elongato-ovatâ; labro subtilissimè denticulato.*

The spouted Triton. Shell fusiformly turreted, with nine rather indistinct varices; spire acuminated; whorls very closely reticulated, last whorl spouted, as it were, anteriorly; pinkish or bluish white, spotted in places with light orange-brown; columellar lamina thin, smooth; aperture elongately ovate; lip very finely denticulated.

Reeve, Pro. Zool. Soc., 1844.
Hab. ——?

Chiefly distinguished by its anterior extension.

Species 82. (Mus. Cuming.)

Triton decollatus. *Trit. testâ oblongo-turritâ, varice nullâ; spirâ subobtusâ, decollatâ; anfractibus transversim sulcatis, sulcis angustissimis, subsuperficiariis, liris intermediis lævibus, apicem versus reticulatis; luteo-fusceseente, fusco variegatâ, sulcis brunneis; canali brevissimo.*

The decollated Triton. Shell oblong-turreted, with no varix; spire rather obtuse, decollated; whorls transversely grooved, grooves very narrow, rather superficial, intermediate ridges smooth, reticulated towards the apex; yellowish brown, variegated with brown, grooves dark brown; canal very short.

Sowerby, Pro. Zool. Soc., 1833.
Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

Mr. Sowerby describes this very characteristic species as having "only a single varix"; it may however have been already noticed; so that I do not consider the marginal thickening of the lip of a shell to constitute a varix, until it becomes one by a renewal of the growth of the shell; the word *varix* signifying a swollen vein running over the surface of anything.

Species 83. (Mus. Cuming.)

Triton truncatus. *Trit. testâ elongato-turritâ, varice nullâ; spirâ multùm decollatâ; anfractibus longitudinaliter concentricè liratis, transversim subtilissimè elevato-striatis; lutescente-aurantiâ, maculis grandibus fuscis seriatim pictâ; canali brevissimo.*

The truncated Triton. Shell elongately turreted, with no varix; spire considerably decollated; whorls longitudinally concentrically ridged, transversely crossed with fine raised striæ; yellowish orange, painted with rows of large brown spots; canal very short.

Hinds, Zoology of the Sulphur, vol. ii. pl. 4. fig. 9 and 10.
Hab. Island of Bohol, Philippines (found under stones at low water); Cuming. New Ireland; Hinds.

I think this is without exception the most perfectly decollated marine shell I remember to have met with.

Species 84. (Mus. Cuming.)

Triton bracteatus. *Trit. testâ oblongo-ovatâ, varice nullâ; spirâ subacuminatâ; anfractibus longitudinaliter concentricè costatis, transversim striatis, striis confertis; lutescente-albâ, costis cæruleo-nigricante creberrimè maculatis; canali brevissimo.*

The plated Triton. Shell oblong-ovate, with no varix; spire rather acuminated; whorls longitudinally concentrically ribbed, transversely striated, striæ close-set; yellowish-white, ribs closely spotted with bluish black; canal very short.

Hinds, Zoology of the Sulphur, vol. ii. pl. 4. fig. 5 and 6.
Hab. Island of Capul, Philippines (found under stones at low water); Cuming. Marquesas Islands; Hinds.

A neat solid shell, in which the ribs are very fully spotted with bluish black.

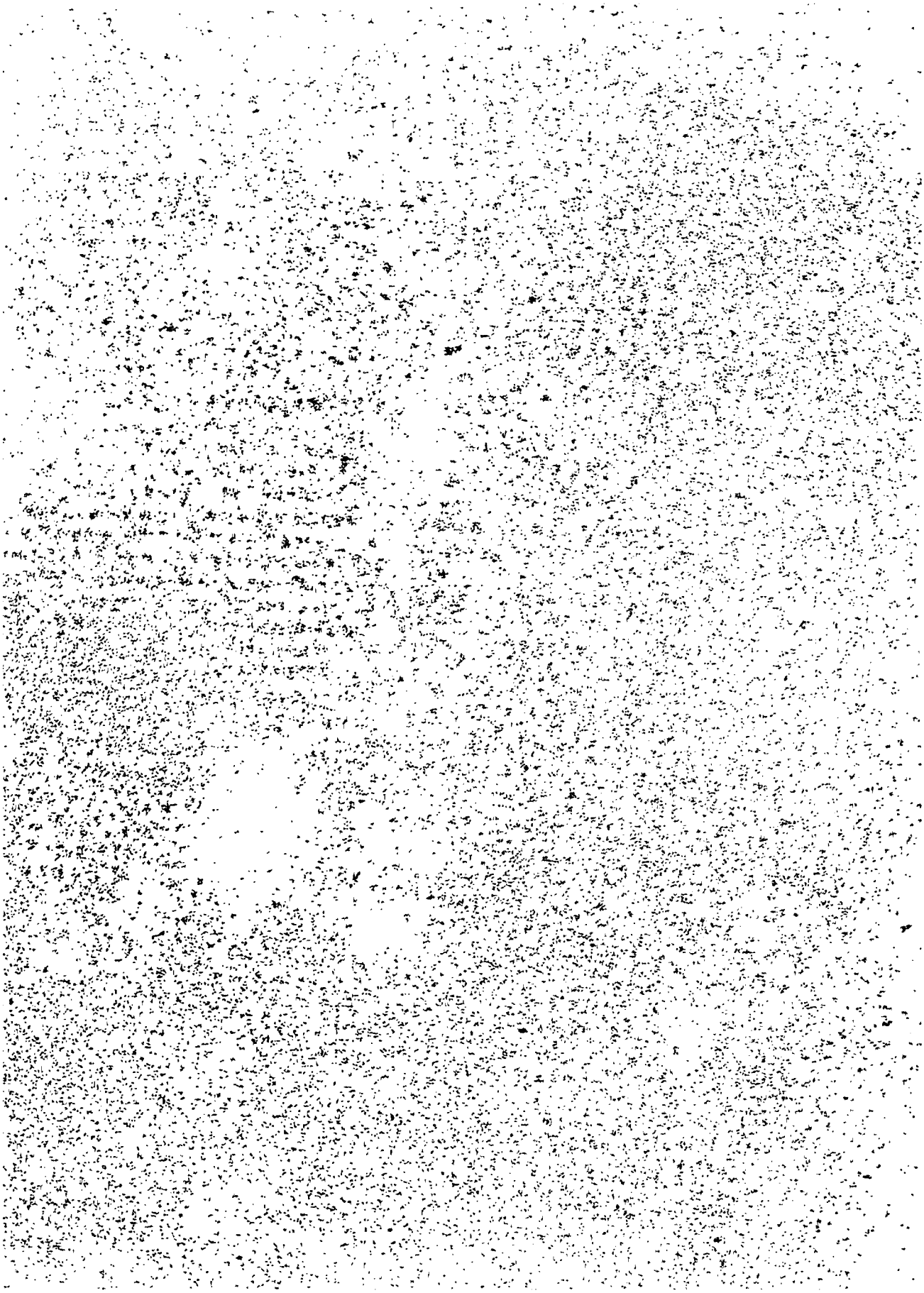
Species 85. (Mus. Cuming.)

Triton decapitatus. *Trit. testâ elongato-turritâ, varice nullâ; spirâ decollatâ; anfractibus longitudinaliter concentricè costellatis, costellis angustis, numerosis, confertis, transversim striatis; lutescente, fusco subindistinctè maculatâ; costellis aurantio-fuscis, lineâ lutescente anticè interruptis, anfractu ultimo lineis lutescentibus duabus; canali brevissimo.*

The beheaded Triton. Shell elongately turreted, with no varix; spire decollated; whorls longitudinally concentrically ribbed, ribs narrow, numerous, close-set, transversely striated; yellowish, somewhat indistinctly spotted with brown; ribs orange-brown, interrupted anteriorly so as to leave a yellowish line round each whorl, the last whorl having two; canal very short.

Reeve, Pro. Zool. Soc., 1844.
Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

Care must be taken not to confound this species with the *Triton truncatus*, in which the ribs are larger and wider apart, and the colour not interrupted.



86.

87.

88.

89.

90.

91.

92.

93.

94.

95.

Sowerby, del et lith.

TRITON.

PLATE XIX.

Species 86. (Mus. Cuming.)

TRITON DIGITALE. *Trit. testâ oblongâ, varice nullâ; spirâ acuminatâ; anfractibus seriatim granulosis, granulis numerosis, confertis, obtusis; albidâ, fuscescente sparsim punctatâ; canali brevissimo.*

THE THIMBLE TRITON. Shell oblong, with no varix; spire acuminated; whorls covered with close-set, obtuse granules; white, dotted here and there with light brown; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

The sculpture of this shell is much like the grained surface of a thimble.

Species 87. (Mus. Cuming.)

TRITON CONCINNUS. *Trit. testâ oblongâ, tenuiculâ, varice nullâ; spirâ subacuminatâ; anfractibus longitudinaliter concentricè costellatis, transversim creberrimè striatis; lutescente, aurantio-fuscescente peculiariter pictâ, apice roseo-purpureo; canali brevissimo.*

THE PRETTY TRITON. Shell oblong, rather thin, with no varix; spire somewhat acuminated; whorls longitudinally concentrically ribbed, transversely very closely striated; yellowish, peculiarly painted with light orange-brown, apex pinkish purple; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

The bright orange-brown painting is peculiarly festooned, as it were, round the upper part of the whorl next the suture.

Species 88. (Mus. Cuming.)

TRITON ANGULATUS. *Trit. testâ oblongâ, turritâ, varice nullâ; spirâ acuminatâ; anfractibus supernè angulatis, longitudinaliter costellatis, transversim striatis, striis prominentibus, confertis; lutea, aut lutescente-albâ, rubido-fusco alboque sparsim punctatâ; canali brevissimo.*

THE ANGULATED TRITON. Shell oblong, turreted, with no varix; spire acuminated; whorls angulated at the upper part, longitudinally ribbed, transversely striated, striæ prominent, close-set; yellow or yellowish white, dotted here and there with white and dark brown; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

Chiefly distinguished by the angular structure of the whorls next the suture.

Species 89. (Mus. Cuming.)

TRITON SCALARIFORMIS. *Trit. testâ fusiformi-oblongâ, tenui, varicibus octo, fimbriatis, prominentibus; spirâ turritâ; anfractibus liris angustis elevatis, crenulatis, crebrè vittatis, interstitiis striis longitudinalibus clathratis; albâ, pellucidâ; laminâ columellari subexpansâ; canali brevi, recurvo; labro fimbriato.*

THE SCALARIA-SHAPED TRITON. Shell fusiformly oblong, thin, with eight prominent fimbriated varices; spire turreted; whorls closely bound or filleted with narrow, crenulated, raised ridges, interstices latticed with longitudinal striæ; white, transparent; columellar lamina rather expanded; canal short, recurved; lip fimbriated.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Bay of Montija, South America (found in coarse sand at the depth of ten fathoms); Cuming.

"This elaborately wrought species," says Broderip, "has the varices placed with a regularity that almost entitles it to a situation among the *Ranellæ*."

Species 90. (Mus. Cuming.)

TRITON LATIVARICOSUS. *Trit. testâ oblongâ, solidâ, subcompressâ, varicibus tribus vel quaternis latis; spirâ subobtusâ; anfractibus longitudinaliter concentricè costellatis, costellis solidis, subdistantibus, transversim creberrimè striatis; canali brevissimo.*

THE BROAD-VARIX TRITON. Shell oblong, solid, a little compressed, with three or four broad varices; spire rather obtuse; whorls longitudinally concentrically ribbed, ribs solid, rather wide apart, transversely very closely striated; canal very short.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The varices of this shell are unusually broad, and the ribs are wider apart on the back of the whorls than on the side here represented.

Species 91. (Mus. Cuming.)

Triton tessellatus. *Trit. testâ elongatâ, varice nullâ; spirâ acuminatâ, acutâ; anfractibus striis longitudinalibus et transversis subtilissimè reticulatis; albidâ, maculis grandibus rubido-fuscis subirregulariter tessellatâ; canali brevi, subrecurvo.*

The tessellated Triton. Shell elongated, with no varix; spire sharply acuminated; whorls very finely reticulated with longitudinal and transverse striæ; whitish, rather irregularly tessellated with large spots of reddish brown; canal short, a little recurved.

Reeve, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

This shell may be easily recognised by its rude, tessellated spots.

Species 92. (Mus. Cuming.)

Triton convolutus. *Trit. testâ fusiformi, tenuissimâ, varicibus novenis valdè conspicuis; spirâ elongato-acuminatâ; anfractibus lineis subacutis elevatis, creberrimis, cingulatis; albâ, pellucidâ; laminâ columellari latè expansâ; labro subtilissimè crenulato; canali brevi, recurvo.*

The convoluted Triton. Shell fusiform, very thin, with nine very conspicuous varices; spire elongately acuminated; whorls encircled with rather sharp close-set raised lines; white, transparent; columellar lamina widely expanded; lip very finely crenulated; canal short, recurved.

Broderip, Pro. Zool. Soc., 1844.

Hab. Island of Zebu, Philippines (found under a stone at low water); Cuming.

It is scarcely possible to conceive a more beautiful and delicately transparent shell than the *Triton convolutus*. Its structure is somewhat similar to that of the *Triton Scalariformis*, but the sculpture is of a quite different character, the whorls being encircled with fine close-set raised lines, which are not latticed with any longitudinal striæ.

Species 93. (Mus. Cuming.)

Triton Quoyi. *Trit. testâ oblongâ, varicibus quaternis quinisve; spirâ mucronatâ; anfractibus gibbosis, costis longitudinalibus et transversis confertim decussatâ, costis ad decussationem nodulosis; aurantio-fuscâ; canali brevissimo; labro intus noduloso-dentato.*

Quoy's Triton. Shell oblong, with four or five varices; spire pointed; whorls gibbous, closely decussated with transverse and longitudinal ribs, noduled at the point of crossing; orange-brown; canal very short; lip nodulously toothed within.

Triton viperinum, Kiener (not of Lamarck, *fossil*).

Hab. New Holland; Quoy.

This shell, M. Deshayes informs us, is by no means the living analogue of Lamarck's fossil *Triton viperinum*.

Species 94. (Mus. Cuming.)

Triton bacillum. *Trit. testâ elongato-clavæformi, solidâ, varicibus duabus; spirâ elongatâ, subretusâ; anfractibus obtuso-granulosis; cærulescente-albâ; canali brevissimo, recurvo; aperturâ breviusculâ.*

The little club Triton. Shell elongately club-shaped, solid, with two varices; spire elongated, rather blunt; whorls obtusely granulated; bluish white; canal very short, recurved; aperture rather short.

Reeve, Pro. Zool. Soc., 1844.

Hab. —— ?

This is the only species of Triton I have noticed with a single varix on each side.

Species 95. (Mus. Cuming.)

Triton carduus. *Trit. testâ globosâ, ventricosâ, varice nullâ; spirâ brevi, acutissimâ; anfractibus longitudinaliter costatis; transversim striatis, striis valdè elevatis, costas super submuricato-nodosis; albidâ, fuscescente variâ; columellâ excavatâ; canali brevi.*

The thistle Triton. Shell globose, ventricose, with no varix; spire short, very sharp; whorls longitudinally ribbed, transversely striated, striæ very elevated, rather prickly knobbed on the ribs; white, variegated with light brown; columella excavated; canal short.

Reeve, Pro. Zool. Soc., 1844.

Hab. —— ?

A rather thin shell, of very sharply cancellated sculpture.

96

97

98

99

101

100

55

102

55

TRITON.

PLATE XX.

Species 96. (Mus. Cuming.)

TRITON NASSOIDES. *Trit. testâ subpyramidali; spirâ acuminatâ, varice nullâ; anfractibus transversim elevato-lineatis, longitudinaliter costatis, costis subobliquis, prominentibus; livido-albidâ, costis pallidè fuscescentibus; canali breviusculo, ascendente; aperturâ parvâ, rotundâ; labro incrassato, latè expanso.*

THE NASSA-LIKE TRITON. Shell somewhat pyramidal; spire acuminated, no varix; whorls encircled with raised lines, longitudinally ribbed, ribs rather oblique, prominent; livid white, ribs faintly tinged with brown; canal rather short, turned upwards; aperture small, round; lip thickened, widely expanded.

GRAY, Griffith's Cuvier's Animal Kingdom.

Hab. Island of Luzon, Philippines; Cuming.

This species, which approximates to the *Triton acuminatus*, may be recognised by the peculiar expansion of the outer lip.

Species 97. (Mus. Norris.)

TRITON PAGODUS. *Trit. testâ pyramidali-ovatâ; spirâ acuminato-turritâ, varice nullâ; anfractibus subventricosis, supernè angulatis, transversim creberrimè elevato-lineatis, longitudinaliter costatis, costis compressiusculis, subdistantibus; albidâ, rubido-castaneo multifasciatâ; canali brevi, valdè recurvo; aperturâ rotundâ; labro intus elevato-striato.*

THE PAGODA TRITON. Shell pyramidally ovate; spire acuminately turreted, no varix; whorls rather ventricose, angulated at the upper part, encircled with close-set raised lines, longitudinally ribbed, ribs rather compressed, somewhat distant; whitish, encircled with numerous reddish chestnut bands; canal short, strongly recurved; aperture round; lip elevately striated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Bay of Montija, West Columbia; Cuming.

This species partakes more of the character of *Nassa* than the preceding; it might be referred indeed to that genus with almost as much propriety as to *Triton*.

Species 98. (Mus. Belcher.)

TRITON FICTILIS. *Trit. testâ ovatâ, solidulâ, varicibus tribus; spirâ acuminatâ; anfractibus longitudinaliter obliquè costatis, transversim tenuiter striatis; cinereâ; aperturâ contractâ, fauce lævigatâ.*

THE EARTHEN TRITON. Shell ovate, rather solid, with three varices; spire acuminated; whorls longitudinally obliquely ribbed, transversely finely striated; ash-colour; aperture contracted, interior smooth.

HINDS, Zoology of the Voyage of H.M.S. Sulphur, *Mollusca*, p. 12. pl. 4. f. 11 and 12.

Hab. Cape of Good Hope (dredged on the L'Agulhas bank at the depth of from fifty to sixty fathoms); Hinds.

A small species, in which the ribs are numerous, close-set, and disposed obliquely.

Species 99. (Mus. Cuming.)

TRITON PICTUS. *Trit. testâ oblongo-ovatâ; spirâ subacuminatâ, varice nullâ; longitudinaliter creberrimè costatâ, transversim elevato-striatâ; rubido-fusco alboque tessellatâ; canali brevi; aperturâ parvâ, fauce albâ.*

THE PAINTED TRITON. Shell oblong-ovate; spire somewhat acuminated, with no varix; longitudinally very closely ribbed, transversely elevately striated; tessellated with reddish brown; canal short; aperture small, interior white.

REEVE, Pro. Zool. Soc., 1844.

Hab. Gallapagos Islands (found under stones at low water); Cuming.

An interesting species tessellated with white and very rich dark brown, in which the latter colour greatly preponderates.

Species 100. (Mus. Belcher.)

TRITON ANOMALUS. *Trit. testâ ovatâ, varice nullâ; spirâ subobtusâ; anfractibus longitudinaliter costatis, lineis elevatis transversis cancellatis; suturis subprofundis; lutescente fuscâ, fusco fasciatâ; canali brevi; aperturâ ovatâ.*

THE ANOMALOUS TRITON. Shell ovate, without any varix; spire rather obtuse; whorls longitudinally ribbed, cancellated with raised transverse lines; sutures rather deep; yellowish brown, banded with brown; canal short; aperture ovate.

Hinds, Zoology of the Voyage of H.M.S. Sulphur, *Mollusca*, p. 12. pl. 4. f. 13 and 14.

Hab. Island of Quibo, Veragua (found on the sandy shore at low water); Hinds.

The general character of this species is not much unlike that of the preceding; it is rather more ventricose, and the ribs are more widely separated from each other.

Species 101. (Mus. Norris.)

Triton vestitus. *Trit. testâ ovatâ, subpyriformi, crassâ, solidâ, varicibus duabus rotundatis; spirâ brevi, subobtusâ; anfractibus liris angustis longitudinalibus et transversis subexiliter clathratis, spiræ præcipuè; fuscâ, epidermide lamellosâ indutâ, anfractu ultimo zonâ lutescente unicâ cingulatâ, varicibus lutescente maculatis; columellâ nigricante-purpureâ, albi-rugosâ; canali breviusculo; aperturâ elongato-ovatâ, fauce albâ; labro incrassato, intus purpureo tincto, denticulato, dentibus albis, binis.*

The clothed Triton. Shell ovate, somewhat pyriform, thick, solid, with two rounded varices; spire short, rather obtuse; whorls rather finely latticed with narrow transverse and longitudinal ridges, especially those of the spire; brown, covered with a lamellated epidermis, last whorl encircled with a single yellowish zone, varices yellow-spotted; columella blackish purple, crossed with white wrinkles; canal rather short; aperture elongately ovate, interior white; lip thickened, stained with dark purple within, toothed, teeth white, ranged two and two.

Hinds, Zoology of the Voyage of H.M.S. Sulphur, *Mollusca*, p. 11. pl. 4. f. 1 and 2.

Hab. Realejo, Gulf of Nicoya and Bay of Honda, west coast of America (found among the rocks on the shore); Hinds.

This fine species, which cannot easily be confounded with any hitherto described, exhibits the following peculiar feature in the sculpture. As the shell increases in growth, the transverse ridges, which are for the most part duplicate, become wider and more prominent, whilst the longitudinal ridges seem to diminish in importance, until they become almost obsolete.

Species 55. (Mus. Norris.)

Triton Tranquebaricus. *Var. varicibus tribus.*

For an account of this species and accompanying figure see Pl. XIV.

Species 102. (Mus. Cuming.)

Triton decipiens. *Trit. testâ elongato-ovatâ, subfusiformi, distortâ, varicibus quinis senisve indistinctis; anfractibus liris angustis elevatis clathratis; albido-lutescente, epidermide sericâ indutâ; columellâ profundè excavatâ, rugosâ, subobsoletè umbilicatâ, callositatibus plurimis supernè armatâ, rufo-aurantiâ; labro plano-concavo, rufo-aurantio radiato, intus fortiter rugoso-dentato.*

The deceptive Triton. Shell elongately ovate, somewhat fusiform, distorted, with five or six indistinct varices; whorls latticed with narrow raised ridges; whitish yellow, covered with a silken epidermis; columella deeply excavated, wrinkled, rather obsoletely umbilicated, armed at the upper part with several callosities, reddish orange; lip flatly concave, rayed with reddish orange, strongly toothed within.

Reeve, Pro. Zool. Soc., 1844.

Hab. Island of Mindanao, Philippines; Cuming.

I have long hesitated to consider this shell any other than a variety of the *Triton cancellinus*; the differences, though slight, seem however to remain constant. It is uniformly of smaller size, the transverse ridges are not duplicate, and the colour and wrinkled denticulations of the columella and outer lip are of a peculiar and distinct character.

TRITON.

[*Temporary Index.*]

	Plate	Species
acuminatus, *Reeve*	XIV.	54
ægrotus, *Reeve*	XII.	42
amictus, *Reeve*	XV.	62
angulatus, *Reeve*	XIX.	88
anomalus, *Hinds*	XX.	100
antiquatus, *Hinds*	XVIII.	80
anus, *Lamarck*	XII.	44
aquatilis, *Reeve*	VII.	24
australis, *Lamarck*	IV. and V.	12
bacillum, *Reeve*	XIX.	94
balteatus, Beck	XIV.	25
bracteatus, *Hinds*	XVIII.	84
canaliferus, *Lamarck*	III.	8
cancellinus, *Deshayes*	XII.	45
carduus, *Reeve*	XIX.	95
caudatus, Gray	XI.	35
caudatus, Pfeiffer	III.	8
Ceylonensis, *Sowerby*	XVII.	73
Chemnitzii, *Gray*	XI.	37
chlorostoma, *Lamarck*	VIII.	25
cingulatus, *Pfeiffer*	XI.	35
clandestinus, *Lamarck*	IV.	13
clathratus, Lamarck	XII.	45
clathratus, *Sowerby*	XVI.	57
clavator, *Lamarck*	III.	7
concinnus, *Reeve*	XIX.	87
constrictus, *Broderip*	XII.	41
convolutus, *Broderip*	XIX.	92
corrugatus, *Lamarck*	V.	15
crispus, *Reeve*	XVII.	68
cutaceus, *Lamarck*	XI.	39
cynocephalus, *Lamarck*	VIII.	26
decapitatus, *Reeve*	XVIII.	85
decollatus, *Sowerby*	XVIII.	82
decipiens, *Reeve*	XX.	102
digitale, *Reeve*	XIX.	86
distortus, *Schubert & Wagner*	XVI.	66
doliarius, *Lamarck*	XIV.	56
eburneus, *Reeve*	XVII.	69
egregius, *Reeve*	XVIII.	78
elongatus, *Reeve*	XV.	59
encausticus, *Reeve*	XII.	43
exaratus, *Reeve*	XIII.	50
exilis, *Reeve*	IV.	11
eximius, *Reeve*	XVIII.	77
femorale, *Lamarck*	VII.	22
ficoides, *Reeve*	XIII.	51
fictilis, *Hinds*	XX.	98
fusiformis, *Kiener*	II.	6
gallinago, *Reeve*	II.	5
gemmatus, *Reeve*	XV.	60
gibbosa, *Broderip*	XI. & XIV.	38
gracilis, *Reeve*	XV.	58
grandimaculatus, *Reeve*	VI.	20
intertextum, Pfeiffer	XVII.	72
labiosus, *Reeve*	XIV.	52
lampas, *Lamarck*	IX.	30
lanceolatus, *Kiener*	XVIII.	79
lativaricosus, *Reeve*	XIX.	90
lignarius, *Broderip*	XIII.	40
lineatus, *Broderip*	II.	4
lineatus, Sowerby	XVI.	65
lotorium, *Lamarck*	VI.	19
maculosus, *Lamarck*	XVI.	64
Mediterraneus, *Sowerby*	XVII.	72
moritinctus, *Reeve*	XIII.	49
Nassoides, *Reeve*	XX.	96
nitidulus, *Sowerby*	XVII.	70
niveus, *Pfeiffer*	XVII.	75
nodiferus, *Lamarck*	III.	9
obscurus, *Reeve*	XVI.	63
olearium, *Deshayes*	X.	32
pagodus, *Reeve*	XX.	97
Pfeifferianus, *Reeve*	IV.	14
pictus, *Reeve*	XX.	99
pilearis, *Lamarck*	VII.	23
pygmæus, *Pfeiffer*	XVII.	67
pyrum, *Lamarck*	X.	33
Quoyi, *Reeve*	XIX.	93
Ranelloides, *Reeve*	III.	10
reticulatus, *Blainville*	XVII.	72
retusus, *Lamarck*	XII.	47
ridens, *Reeve*	XII.	46
rubecula, *Lamarck*	IX.	29
rudis, *Broderip*	XIV.	53
rutilis, Menke	XIV.	52
sarcostoma, *Reeve*	VII.	21
Sauliæ, *Reeve*	V.	17
scabra, *King*	XI.	34
Scalariformis, *Broderip*	XIX.	89

	Plate	Species
scrobiculator, *Lamarck*	VIII.	28
sculptilis, *Reeve*	XVIII.	76
Sinensis, *Reeve*	VI.	18
siphonatus, *Reeve*	XVIII.	81
Soverbii, *Reeve*	XVI.	65
Spengleri, *Lamarck*	XI.	36
subdistortus, *Lamarck*	I.	2
succinctus, Lamarck	X.	32
tessellatus, *Reeve*	XIX.	91
Thersites, *Reeve*	XIII.	48
tigrinus, *Broderip*	VIII.	27
tortuosus, *Reeve*	XVII.	74
Tranquebaricus, *Lamarck*	XIV. & XX.	55
trilineatus, *Reeve*	X.	31
tripus, *Lamarck*	V.	16
truncatus, *Hinds*	XVIII.	83
tuberosus, *Lamarck*	I.	1
turriculatus, Deshayes	XVII.	72
undosus, Kiener	XI.	35
variegatus, *Lamarck*	I. and II.	3
verrucosus, *Reeve*	XVII.	71
vespaceus, *Lamarck*	XV.	61
vestitus, *Hinds*	XX.	101
viperinum, Kiener	XIX.	93

MEMORANDA.

Species 37. Triton Chemnitzii, *Gray*.

The Author has erred in quoting Mr. Hinds's manuscript name of *Cassidaria setosa* for this species, to which he is informed that gentleman never gave publicity and subsequently abandoned.

Triton cancellatus, *Lamarck*, referred to genus Fusus.

MONOGRAPH

OF THE GENUS

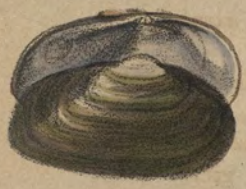
GLAUCONOME.

"Which of us
Whose eye so superficially surveys
These things, as not to mind from whence they grow."—*Milton.*

2

3

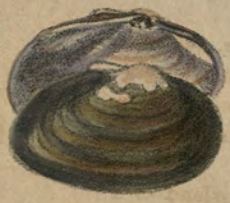
4a



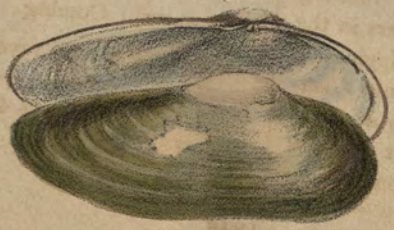
5

6

4b



8



GLAUCONOME.

PLATE I.

Genus GLAUCONOME, Gray.

Testa oblongo-ovalis, tenuis, æquivalvis, subventricosa, inæquilateralis, anticè rotundata, posticè plus minusve attenuata, epidermide viridescente, tenui, corneâ induta. Cardo dentibus in utrâque valvâ tribus, posticis majoribus, valvæ dextralis medio, sinistralis postico, bifidis. Impressiones musculares in utrâque valvâ duæ, antica marginalis, oblonga, postica subquadrata. Pallii impressio muscularis sinu magno, anticè obtuso. Ligamentum externum, oblongum.

Shell oblong-oval, thin, equivalve, slightly ventricose, inequilateral, rounded anteriorly, more or less attenuated posteriorly, covered with a thin epidermis, which is sometimes inflected over the margin. Hinge; three teeth in each valve, the posterior of which are the larger, middle tooth of the right valve and posterior of the left valve bifid; no lateral teeth. Muscular impressions, two in each valve, the anterior marginal, oblong, the posterior somewhat square. Muscular impression of the mantle with a large sinus, obtuse anteriorly. Ligament external, oblong.

The genus *Glauconome* was introduced some years since by Mr. Gray in his 'Spicilegia Zoologica,' with the description of a single species collected by John Reeves, Esq., in China; another species appears to have been described by the great author of the 'Systema Naturæ,' under the title of *Solen virens* (the original examples of which are still preserved in the Museum of the Linnean Society), and I have now the pleasure of adding seven new species, which materially increase the generic importance of the group.

The *Glauconomes* are of a light semiperlaceous structure, covered with a thin light-green horny epidermis, which in some species is very peculiarly wrinkled or shrivelled and inflected over the margin; and their hinge is composed of three irregularly forked teeth in each valve, some of which are bifid, the valves being united by an oblong external ligament. They live in brackish water (partially imbedded in the mud), in the mouths of rivers at their confluence with the sea, and have only been found as yet in the eastern hemisphere. Of the nine species above alluded to, the localities of eight are known to be as follows:—one inhabits the rivers of China, one the Ganges, three inhabit rivers running into the Bay of Manila, and three inhabit rivers in the islands of Zebu, Negros and Luzon of the Philippines.

The place selected by Mr. Gray for the genus *Glauconome* in the natural system was in his family of *Veneridæ*: it appears to me, however, to exhibit a much stronger affinity with the *Solenacea*; in my 'Conchologia Systematica' I referred it to that family, and the propriety of this removal has been subsequently confirmed.

Species 1. (Mus. Cuming.)

GLAUCONOME CHINENSIS. *Glauc. testâ elongato-oblongâ, striatâ, circiter umbones erosâ, lateribus rotundatis, postico subangulato-attenuato.*

THE CHINESE GLAUCONOME. Shell elongately oblong, striated, eroded about the umbones, sides round, posterior rather angularly attenuated.

GRAY, Spicilegia Zoologica, p. 6. pl. 3. f. 13 and 13 *a*. Sowerby, Genera of Shells, No. 42.

Hab. Rivers of China.

This species is generally much eroded.

Species 2. (Mus. Cuming.)

GLAUCONOME STRAMINEA. *Glauc. testâ subelongato-ovatâ, circiter umbones erosâ, latere antico rotundato, postico subattenuato, leviter angulato, rotundato; epidermide nitidâ, viridescente-stramineâ, angulum super corrugatâ.*

THE STRAW-COLOURED GLAUCONOME. Shell rather elongately ovate, eroded about the umbones, anterior side rounded, posterior somewhat attenuated, angularly rounded; epidermis thin, light greenish straw-colour; wrinkled on the angle.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mouths of rivers running into the Bay of Manila.

A light delicate shell slightly angulated on the anterior side, with the epidermis lying on the angle in wrinkles.

Species 3. (Mus. Cuming.)

GLAUCONOME RADIATA. *Glauc. testâ oblongo-ovatâ, compressiusculâ, carneâ, purpureo-radiatâ, epidermide viridescente prope marginem indutâ, lateribus rotundatis, postico subacuminato.*

THE RAYED GLAUCONOME. Shell oblong-ovate, rather compressed, flesh-colour, rayed with purple, covered near the margin with a light greenish epidermis, sides rounded, posterior a little acuminated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mouth of a small river at San Nicolas, island of Zebu, Philippines, (found in sandy mud at low water); Cuming.

The only species rayed externally with purple.

Species 4. (Mus. Cuming.)

GLAUCONOME RUGOSA. *Glauc. testâ elongato-oblongâ,*

rugosâ, circiter umbones plus minusve erosâ, lateribus rotundatis, epidermide peculiariter corrugatâ, latere postico subobsoletè angulato.

The wrinkled Glauconome. Shell elongately oblong, wrinkled, more or less eroded about the umbones, sides rounded, with the epidermis upon them peculiarly shrivelled, posterior side faintly angulated.

Hanley, Species of Shells (Wood, Ind. Test. 2nd Supp., pl. x. f. 24.)

Hab. Mouths of rivers running into the Bay of Manila.

Variety β.

Testa subangustior.

Shell rather narrower.

Hab. A small river in Jimamailan, island of Negros, Philippines; Cuming.

This species, which is by far the largest of the genus, presents a very peculiar arrangement of the epidermis. In the middle of the shell it lies in ridges parallel with the lines of growth, but towards the ends, especially the anterior, it turns suddenly upwards and becomes dispersed in scattered shrivelled wrinkles.

Species 5. (Mus. Cuming.)

Glauconome angulata. *Glauc. testâ elongato-oblongâ, striatâ, circiter umbones plus minusve erosâ, latere antico rotundato, postico angulato, carinâ obtusâ ab umbonibus ad marginem decurrente.*

The angulated Glauconome. Shell elongately oblong, striated, more or less eroded about the umbones, anterior side rounded, posterior angulated, with a blunt keel running from the umbones to the margin.

Reeve, Pro. Zool. Soc., 1844.

Hab. Mouth of a river at Jinigaran, island of Negros, Philippines (found in sandy mud at low water); Cuming.

An angulated species in which the epidermis is of rather a dingy character.

Species 6. (Mus. Cuming.)

Glauconome corrugata. *Glauc. testâ elongato-ovatâ, subtilissimè striatâ, circiter umbones erosâ, lateribus rotundatis, postico acuminato-angulato, epidermide angulum super corrugatâ; intus vividè purpureo-radiatâ.*

The wrinkled Glauconome. Shell elongately ovate, very finely striated, eroded about the umbones, sides rounded, posterior side acuminately angled, with the epidermis wrinkled upon the angle; interior vividly rayed with purple.

Reeve, Pro. Zool. Soc., 1844.

Hab. Mouths of rivers running into the Bay of Manila (found in the mud at low water); Cuming.

The posterior side of this species is more acuminately angled than that of any other; the epidermis is delicately wrinkled upon the angle, and the interior of the shell is rayed with purple.

Species 7. (Mus. Cuming.)

Glauconome curta. *Glauc. testâ ovatâ, curtâ, tenui, subtilissimè striatâ, ad umbones paululùm erosâ, lateribus rotundatis; intus cæruleo-carneo tinctâ.*

The short Glauconome. Shell ovate, short, thin, very finely striated, a little eroded at the umbones, sides rounded; interior stained with bluish flesh-colour.

Hanley, Species of Shells (Wood, Ind. Test., 2nd Supp., pl. ? f. ?).

Hab. Mouth of a river in Agoo, province of Pagasinan, island of Luzon (found in sandy mud at low water); Cuming.

This species is of a shorter ovate form than any other; it has a fine silken epidermis, and the interior is of a bluish salmon-colour.

Species 8. (Mus. Cuming.)

Glauconome cerea. *Glauc. testâ oblongo-ovatâ, pallidè stramineâ, subtilissimè striatâ, lateribus rotundatis, postico subangulato-attenuato.*

The waxen Glauconome. Shell oblong-ovate, pale straw-colour, very finely striated, sides rounded, posterior side rather angularly attenuated.

Reeve, Pro. Zool. Soc., 1844.

Hab. The river Ganges.

A very delicate pale straw-coloured shell, having very much the appearance of wax.

Species 9. (Mus. Linn. Soc.)

Glauconome virens. *Glauc. testâ cylindraceo-oblongâ, tenui, lateribus rotundatis, latere postico subacuminato, vix angulato.*

The green Glauconome. Shell cylindrically oblong, thin, sides rounded, posterior side rather acuminated, very slightly angulated.

Hanley, Species of Shells.

Solen virens, Linnæus.

Hab. —— ?

The shell here figured is in the collection of the Linnean Society, with the name *Solen virens* attached to it in Linnæus's own hand-writing.

MONOGRAPH

OF THE GENUS

MYADORA.

"Thyself how wondrous then,
Unspeakable! who sitt'st above these heavens
To us invisible, or dimly seen
In these thy lowest works".—*Milton.*

1

2

3a

4

3b

5

6a

7a

6b

7b

6c

8

9

10

MYADORA.

PLATE I.

Genus MYADORA, Gray.

Testa trigono-ovata, inæquivalvis, valvâ sinistrâ plus minusve concavâ, dextrâ planâ, rarò concaviusculâ; inæquilateralis, latere postico rotundato, antico leviter flexuoso, coarctato, infernè plerumque truncato, depressione plano-concavâ sub umbones. Cardo: dentibus in valvâ dextrâ duobus lateralibus, elongatis, rudibus, ab umbone divergentibus, quorum postico plano, subobsoleto; in valvâ sinistrâ projecturis sulcatis duabus lateralibus dentes recipientibus. Ligamentum internum, in foveâ trigonâ centrali inter dentes insertum, appendice testaceâ concavâ sæpè internè protectum. Valvæ intùs margaritaceæ, pallii impressione musculari anticè sinuatâ.

Shell triangularly ovate, inequivalve, left valve more or less concave, right valve flat, rarely a little concave; inequilateral, posterior side rounded, anterior slightly flexuous, contracted, generally truncated, with a flat hollow depression under the umbones. Hinge: two rude elongated lateral teeth in the right valve diverging from the umbo, one on each side, the posterior of which is flat and somewhat obsolete; in the left valve are two grooved lateral projections receiving the teeth of the opposite valve. Ligament internal, inserted in a triangular pit between the teeth, often protected internally by a testaceous appendage called the clavicle or hinge-piece. Valves pearly within, muscular impression of the mantle sinuated anteriorly.

The genus *Myadora*, introduced by Mr. Gray in his account of the 'Shells of Molluscous Animals' in the 'Synopsis of the Contents of the British Museum,' is one that cannot fail to be appreciated; nothing indeed can more fully demonstrate the necessity for a new generic allotment of certain species than the circumstance of their having been transported at different times from one genus to another by the same author*.

* "In an Appendix to a Catalogue of Shells collected in the Australian and Polynesian groups of Islands by Mr. S. Stutchbury," says Sowerby, in his account of the genus *Pandora*, 'Species Conchyliorum,' Part I., "I have described under the name of *Pandora brevis*, a shell which I am now convinced is rather an *Anatina*, inasmuch as its flat valve is destitute of the blunt tooth which characterizes the *Pandoræ*; it differs also from them in having a sinus in the muscular impression of the mantle, and in being possessed of a small testaceous appendage attached to the ligament." This shell however, it will be seen, has not the spoon-shaped processes of *Anatina*.

The *Myadoræ* partake of the characters of *Anatina* and *Pandora*; and as they have been referred at times to both of those genera, it is important to describe with some minuteness the differences which entitle them to generic distinction.

In *Anatina* the hinge is composed of two hollow spoon-shaped processes containing the ligament, protected in some species by a moveable testaceous clavicle, which crosses the dorsal axis of the shell on the posterior side*; as in *Anatina truncata* for example, a species now commonly obtained with this accessory hinge-piece complete.

In *Pandora*, which is too flat and compressed a shell to admit any structure like the spoon-shaped processes of *Anatina*, the ligament is lodged in a cicatrix, protected on the posterior side by a single central oblong tooth in the right valve only; the clavicle is dispensed with, but the loss of it is in a degree supplied by a thickening and folding over of the dorsal margin.

In *Myadora*, which, being a thicker shell, requires a hinge of more solid construction, the peculiarities above noted in *Anatina* and *Pandora*, the clavicle of the former, the folded margin of the latter, are united in the following modified condition. The dorsal margin of the right valve of *Myadora* becomes consolidated into a tooth-like ledge or projection diverging from, on each side, the umbo, fitting into grooved projections of similar construction in the left valve; and by the diverging of these tooth-like projections, a compact triangular cavity is obtained in the centre of each valve for the insertion of the ligament, which in some of the species is walled in as it were internally, not laterally as in *Anatina*, by a moveable testaceous clavicle forming an angle with the diverging ledges.

The clavicles of *Anatina* and *Myadora*, it may be thus observed, are very differently situated with respect to the ligament, the one being a side appendage extending across the dorsal axis of the shell, the other an internal appendage forming an angle with the dorsal axis.

Of the following ten species which I propose to refer to this genus, the grand type, *Myadora striata*, is an inhabitant of Port Nicholson, New Zealand; the remainder are for the most part collected by Mr. Cuming at the Philippine Islands.

* The side on which the proboscis or siphons are protruded is assumed to be the anterior.

Species 1. (Mus. Cuming.)

Myadora crassa. *Myad. testâ trigono-orbiculari, subsolidâ, valvâ dextrâ concaviusculâ; valvis concentricè striatis, striis elevatis, subdistantibus, versus marginem obsoletis, carinâ indistinctâ prope marginem anticam ab umbonibus divergente; umbonibus elevatis.*

The thick Myadora. Shell triangularly orbicular, right valve rather concave; valves concentrically striated, striæ raised, rather distant, obsolete towards the margin, with an indistinct keel diverging from the umbones near to the anterior edge.

Anatina crassa, Stutchbury, Zool. Journ., vol. v. p. 100, Tab. Supp. 43. f. 5 and 6.

Hab. ——?

This short rounded species is the only one I have seen at present in which the right valve is concave.

Species 2. (Mus. Cuming.)

Myadora trigona. *Myad. testâ trigonâ, valdè planodepressâ, usque marginem concentricè striatâ, striis prominentibus, quasi carinulatis, prope marginem anticam undatis; umbonibus acutissimè mucronato-elevatis.*

The triangular Myadora. Shell triangular, very flatly depressed, concentrically striated to the edge, striæ prominent, keel-like, waved on approaching the anterior margin; very sharply pointedly raised.

Reeve, Pro. Zool. Soc., 1844.

Hab. Island of Luzon, Philippines; Cuming.

Four odd valves only of this interesting little species, in which the concentric striæ are remarkably prominent and keel-like, were found by Mr. Cuming at the above-mentioned island.

Species 3. (Fig. *a* and *b*, Mus. Cuming.)

Myadora plana. *Myad. testâ trigono-oblongâ, anticè subtruncatâ, planissimâ, concentricè striatâ, striis elevatis, subdistantibus, valvæ sinistræ prominentibus.*

The flat Myadora. Shell triangularly oblong, slightly truncated anteriorly, very flat, concentrically striated, striæ raised, rather distant, those of the left valve the more prominent.

Reeve, Pro. Zool. Soc., 1844.

Hab. Baclayon, island of Bohol, Philippines (found in sandy mud at the depth of seventeen fathoms); Cuming.

This species is chiefly distinguished from its congeners, the *Myadoræ tincta* and *trigona*, by its more oblong shape.

Species 4. (Mus. Cuming.)

Myadora ovata. *Myad. testâ ovatâ, subtriangulari, valvâ sinistrâ ventricoso-concavâ, dextrâ leviter convexâ, concentricè striatâ, striis elevatis, prope marginem anticam subobsoletis, valvæ dextræ numerosis, confertis, sinistræ prominentibus, subdistantibus; umbonibus depresso-incurvis.*

The ovate Myadora. Shell ovate, somewhat triangular, left valve ventricosely concave, right valve slightly convex, concentrically striated, striæ raised, somewhat obsolete near the anterior margin, those of the right valve numerous and close, of the left valve prominent and rather distant; umbones depressly incurved.

Reeve, Pro. Zool. Soc., 1844.

Hab. San Nicolas, island of Zebu, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

This species exhibits a greater disparity in the sculpture of the valves than any other, the striæ of the right valve being very fine and close-set, whilst those of the left are almost keel-like and comparatively distant.

Species 5. (Mus. Cuming.)

Myadora tincta. *Myad. testâ trigonâ, anticè subtruncatâ, usque marginem concentricè striatâ, striis elevatis, prominentibus; fuscescente tinctâ.*

The stained Myadora. Shell triangular, slightly truncated anteriorly, concentrically striated to the margin, striæ raised, prominent; stained with light brown.

Reeve, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found in coral sand at the depth of six fathoms); Cuming.

The *Myadora tincta* scarcely differs from the *Myadora plana*, except in being of a less oblong and more triangular form.

Species 6. (Mus. Norris.)

Myadora striata. *Myad. testâ trigono-ovatâ, planâ, anticè leviter flexuosâ, concentricè striatâ, striis numerosis, confertis, irregularibus; depressione anticâ concavâ; cardine appendice testaceâ munito.*

The striated Myadora. Shell triangularly ovate, flat, slightly flexuous anteriorly, concentrically striated,

striæ numerous, close, irregular; anterior depression concave; hinge furnished with a testaceous appendage.

GRAY, MSS. British Museum.

Pandora striata, Deshayes, Mag. de Zool.

Hab. Port Nicholson, New Zealand; Swainson.

Fig. 6 *b* represents the testaceous clavicle, or hinge-piece; Fig. 6 *c* the right, or flat valve, with the clavicle *in situ* attached to the ligament.

Species 7. (Mus. Cuming.)

MYADORA BREVIS. *Myad. testâ subtrigonâ, anticè flexuoso-costatâ, concentricè striatâ, striis numerosis, elevatis, peculiariter rugosis; umbonibus anticè reflexis; cardine appendice testaceâ munito.*

THE SHORT MYADORA. Shell somewhat triangular, flexuously ribbed, anteriorly concentrically striated, striæ numerous, elevated, and peculiarly wrinkled; umbones reflected anteriorly; hinge furnished with a testaceous appendage.

Anatina brevis, Stutchbury, Zool. Journ., vol. v. p. 99, Tab. Supp. 43. f. 1. and 2.

Hab. ——?

Having seen only the single left valve of this remarkable species here figured, I am unable to say anything of the right valve; Mr. Stutchbury, however, describes it as being slightly convex. He states also that this shell is furnished with a testaceous clavicle.

Species 8. (Mus. Cuming.)

MYADORA OBLONGA. *Myad. testâ trigono-oblongâ, anticè latissimè truncatâ, concentricè striatâ, striis elevatis, regularibus, prope marginem anticam angulatis.*

THE OBLONG MYADORA. Shell triangularly oblong, very broadly truncated anteriorly, concentrically striated, striæ raised, regular, angulated near the anterior margin.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Mindoro, Philippines; Cuming.

The anterior side of this species is the most broadly truncated of any.

Species 9. (Mus. Cuming.)

MYADORA CURVATA. *Myad. testâ curvato-oblongâ, valvâ dextrâ convexiusculâ, anticè subindistinctè flexuoso-costatâ, concentricè striatâ, striis elevatis, angustis, regularibus.*

THE CURVED MYADORA. Shell of a curved oblong form, right valve rather convex, anteriorly somewhat indistinctly flexuously ribbed, concentrically striated, striæ raised, narrow, regular.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Corrigidor, Philippines; Cuming.

This species differs also in form rather than in variety of sculpture.

Species 10. (Mus. Cuming.)

MYADORA PANDORÆFORMIS. *Myad. testâ oblongo-ovatâ, anticè leviter flexuosâ, abruptè truncatâ, valvâ sinistrâ ventricoso-concavâ; concentricè striatâ, striis valvæ sinistræ umbones versus elevatis, valvæ dextræ subtilissimis, lævigatis; umbonibus anticè inflexis; cardine appendice testaceâ munito.*

THE PANDORA-SHAPED MYADORA. Shell oblong-ovate, slightly flexuous anteriorly, abruptly truncated, left valve ventricosely concave; concentrically striated, striæ of the left valve raised towards the umbones, those of the right valve very fine, smooth; umbones inflected anteriorly; hinge furnished with a testaceous appendage.

Anatina Pandoræformis, Stutchbury, Zool. Journ., vol. v. p. 99, Tab. Supp. 43. f. 3 and 4.

Hab. ——?

The *Myadoræ striata, brevis* and *Pandoræformis* are the only species of the genus at present known to have the clavicle.

MONOGRAPH

OF THE GENUS

R A N E L L A.

"Framed in the prodigality of nature."—*Shakspere.*

1

2

3

4

ROYAL ASIATIC SOCIETY LIBRARY OF THE BOMBAY BRANCH OF THE

RANELLA.

PLATE I.

Genus RANELLA, Lamarck.

Testâ ovatâ vel oblongo-ovatâ, spirâ plus minusve acuminatâ; varicibus sæpissimè obliquis, ad partem anfractûs dimidiam depositis, seriem longitudinalem utroque latere efformantibus; canali nunc brevissimo, nunc longiusculo; aperturâ ovatâ, plerumque utrinque canaliculatâ.

Shell ovate or oblong-ovate, spire more or less acuminated; varices most frequently oblique, deposited at every half-whorl, forming a longitudinal row on each side; canal sometimes very short, sometimes rather long; aperture ovate, generally canaliculated at both ends.

The genus *Ranella* was established by Lamarck for the reception of that portion of the varicose *Canalifera* which construct a varix upon every half-volution. By this lateral deposit of the varices the shell acquires a more or less depressed two-edged structure, and this joint peculiarity of growth is all that has been thought necessary to determine the character of the genus. Various imperfect notions have been entertained by naturalists as to the purpose and influence of varices in the structure of canaliferous shells; De Blainville assumes that they indicate periods of generation; but a varix, says M. Deshayes, is deposited on the earliest formation of the shell, and it is quite unnatural to suppose that the animal employs that function immediately on its ejection from the ovary. Other zoologists have imagined that the varices indicate the order of the seasons; but, repeats M. Deshayes, the Ranellæ live in a climate where there is but one season, and the temperature of the waters they inhabit is the same all the year round. It is agreed on all sides that the varices are deposited as a marginal protection to the shell during a period of rest; but I find nothing beyond conjecture as to the purpose of this periodical rest, the time which elapses between the construction of a varix and a renewal of the operation of growth, or between the renewal of growth and the formation of another varix.

Very few alterations have been proposed in the generic appropriation of the Ranellæ: Schumacher subdivides them by the introduction of the genera *Gyrina* and *Bufonaria*, and Pfeiffer abandons the genus altogether to unite them with the *Tritons*; neither, however, of these changes have been adopted.

The last-published monograph of the genus *Ranella* by M. Kiener included twenty-seven species; that number I have now the pleasure of increasing to fifty, and of these about fifteen are new to science.

Species 1. (Mus. Cuming.)

RANELLA SUBGRANOSA. *Ran. testâ elongato-ovatâ, varicibus subobtuso-rotundatis; anfractibus leviter angulatis, ad angulum nodulosis, transversim liratis, liris numerosis, confertis, subtiliter granulatis; cærulescente-albâ, fuscescente variè tinctâ et strigatâ; aperturâ elongato-ovali, utrinque canaliculatâ; labro dentato.*

THE SUBGRAINED RANELLA. Shell elongately ovate, varices rather obtusely rounded; whorls slightly angulated, noduled at the angle, transversely ridged, ridges numerous, close-set, finely granulated; blueish white, variously stained and streaked with light brown; aperture elongately oval, canaliculated at both ends; lip toothed.

BECK, Sowerby, Jun., Conch. Illus., *Ranella*, f. 18.
Ranella Beckii, Kiener.

Hab. Bay of Manila; Cuming.

This species may be distinguished by its finely granulated close-set ridges, by its peculiar blue tinge of colour, and by the rounded, spineless character of the varices.

It was very injudicious of Dr. Beck to give the name of *sub*granosus to this shell, when there is already a *semi*granosus of Lamarck; still the names are different, and I think M. Kiener is not justified in altering them.

Species 2. (Mus. Cuming.)

RANELLA ALBIVARICOSA. *Ran. testâ oblongo-ovatâ, depressiusculâ, varicibus tuberculis subspinosis prominentibus armatis; anfractibus leviter angulatis, tuberculis subspinosis infra angulum biseriatim armatis, transversim elevato-striatis, infernè liratis, striis lirisque leviter undulatis, subtilissimè granulatis; albâ, rufescente-fusco tinctâ, varicibus niveis; aperturâ oblongo-ovali, utrinque canaliculatâ, fauce pallidè purpurascente; labro dentato et sulcato.*

THE WHITE-VARIX RANELLA. Shell oblong-ovate, rather depressed, varices armed with prominent prickly tubercles; whorls slightly angulated, armed beneath the angle with two rows of prickly spines, transversely elevately striated, ridged towards the

lower part, striæ and ridges slightly undulated, very finely granulated; white, stained with reddish brown, varices snowy-white; aperture oblong-oval, canaliculated at both ends, interior faintly tinged with purple; lip toothed and grooved.

Reeve, Pro. Zool. Soc., 1844.

Murex rana, Linnæus; Martini, Conch., vol. iv. pl. 133. f. 1270–71.

Hab. Ceylon.

How comes it to pass that this common and peculiarly characteristic species has escaped the notice of so many good discriminating conchologists who have written on the genus?

Species 3. (Mus. Cuming.)

Ranella gigantea. *Ran. testâ fusiformi-turritâ, ventricosâ, spirâ valdè acuminatâ, varicibus rotundatis, obliquè separatis; anfractibus transversim subobsoletè costatis et elevato-striatis, costis nodosis, striis leviter undulatis; albidâ, fuscescente tinctâ; columellâ subrugosâ, canali longiusculo, liris regularibus angustis dorsim cælato; aperturâ ovatâ, labro dentato, dentibus binis.*

The gigantic Ranella. Shell fusiformly turreted, ventricose, spire very much acuminated, varices rounded, obliquely separated; whorls transversely rather obsoletely ribbed and elevately striated, ribs noduled, striæ slightly waved; whitish, stained with light brown; columella a little wrinkled, canal rather long, carved at the back with narrow, regular ridges; aperture ovate, lip toothed, teeth ranged in pairs.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 540.

Ranella reticularis, Deshayes.

Ranella ranina, De Blainville.

Gyrina maculata, Schumacher.

Apollo gyrina, De Montford.

Hab. Mediterranean.

There is so much confusion among the synonymes which Linnæus has quoted at different times for the illustration of his *Murex reticularis*, that I have not ventured to refer to it. It is cited by some authors for this species, some for the *Triton cancellinus*, others for the *Triton olearium*, than which there are scarcely three shells belonging to this immediate group of more opposite character.

Species 4. (Mus. Cuming.)

Ranella leucostoma. *Ran. testâ subfusiformi-turritâ, spirâ acuminatâ, varicibus obliquè separatis; anfractibus transversim tenuissimè striatis, subangulatis, ad angulum nodoso-tuberculatis; rufo-castaneâ, apicem versus interdum albidâ, varicibus albimaculatis; columellâ lævi, supernè callositate armatâ; canali breviusculo; aperturâ ovatâ, fauce albâ; labro intus fortiter dentato.*

The white-mouth Ranella. Shell somewhat fusiformly turreted, spire acuminated, varices obliquely separated; whorls transversely very finely striated, slightly angulated, nodosely tubercled at the angle; reddish chestnut-brown, sometimes whitish towards the apex, varices spotted with white; columella smooth, armed at the upper part with a callosity; canal rather short; aperture ovate, interior white; lip strongly toothed within.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 542.

Triton leucostoma, Quoy and Gaimard.

Hab. New Holland.

This is one of those species of *Ranella* that partake so intimately of the characters of *Triton*.

Species 5. (Mus. Stainforth.)

Ranella candisata. *Ran. testâ elongato-turritâ; varicibus obliquis, paululùm separatis; anfractibus creberrimè granoso-striatis, granorum striis nonnullis prominulis; anfractibus infra suturam verrucoso-marginatis; lutescente-albâ, castaneo-fusco sparsim punctatâ et maculatâ; columellâ multirugosâ; aperturâ ovatâ, fauce peculiariter crebrisulcatâ; labro denticulato, dentibus binis.*

The shining-white Ranella. Shell elongately turreted; varices oblique, a little separated; whorls very closely granulously striated, some of the striæ of granules prominent; whorls verrucosely marginated beneath the suture; yellowish white, sparingly dotted and spotted with chestnut-brown; columella many-wrinkled; aperture ovate, interior peculiarly closely grooved; lip denticulated, teeth ranged in pairs.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 542.

Murex candisatus, Chemnitz.

Murex conditus, Gmelin.

Colubraria granulata, Schumacher.

Hab. Island of Annaa, Pacific Ocean, and island of Luzon, Philippines; Cuming.

A species of great rarity and beauty, the entire surface of which is very closely and curiously granulated.

6

7

8

9a

9b

RANELLA.

PLATE II.

Species 6. (Mus. Cuming.)

RANELLA VENTRICOSA. *Ran. testâ acuminato-ovatâ, tenui, ventricosissimâ, varicibus subindistinctis; anfractibus angulatis, ad angulum fortiter tuberculatis, transversim striatis, subgranosis; albidâ, luteo-castaneo variegatâ, cingulis castaneis angustis subdistantibus ornatâ; columellâ lævi; canali brevissimo, latiusculo; aperturâ amplâ, fauce albâ; labro crenato, supernè profundè sinuato.*

THE VENTRICOSE RANELLA. Shell acuminately ovate, thin, very ventricose, varices rather indistinct; whorls angulated, strongly tubercled on the angle, transversely striated, slightly granulated; whitish, variegated with yellowish chestnut, ornamented with rather distant narrow chestnut bands; columella smooth; canal very short, rather broad; interior of the aperture white; lip crenated, deeply sinuated at the upper part.

BRODERIP, Pro. Zool. Soc., 1832.

Ranella tenuis, Potiez and Michaud, Moll. Mus. Douai, p. 426. pl. 34. f. 1 and 2.

Hab. Bay of Callao, Peru; Cuming. Chili; Potiez and Michaud.

The varices of this shell are very indistinctly developed, and do not follow immediately one under the other. The lip is deeply sinuated at its junction with the body whorl after the manner of a *Pleurotoma*, and the tubercles of the last whorl exhibit a somewhat unusual arrangement in being lower on one half of the back of the whorl than on the other.

Species 7. (Mus. Stainforth.)

RANELLA SPINOSA. *Ran. testâ elongato-ovatâ, depressâ, varicibus spinis duabus longiusculis fortibus armatis; anfractibus supernè leviter angulatis, exiliter nodulosoliratis, liris tuberculis brevibus acutis sparsim muricatis; fulvo-fuscescente, cingulis castaneis angustis subindistinctè ornatâ; columellâ depressâ; canali subextenso; labro intus crenato.*

THE SPINED RANELLA. Shell elongately ovate, depressed, varices each armed with two strong, rather long spines; whorls slightly angulated at the upper part, faintly nodulously ridged, ridges muricated here and there with short sharp tubercles; tawny brown, ornamented with rather indistinct narrow chestnut bands; columella depressed; canal somewhat extended; lip crenated within.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 545.

Murex rana, var. B. Linnæus.

Bufonaria spinosa, Schumacher.

Hab. Mauritius, Ceylon (found on coral reefs); Hennah.

This was the only spined example of the genus until the recent discovery of a beautiful smaller species, *Ranella pectinata* (vide Pl. VII.), collected by Mr. Hinds during the late expedition of H.M.S. *Sulphur*, and described in the 'Zoology' of that voyage.

Species 8. (Mus. Cuming.)

RANELLA FOLIATA. *Ran. testâ ovato-conicâ, ventricosâ, liris elevatis, numerosis, confertis, granulatis, undiquè cinctâ, interstitiis striis longitudinalibus subtilissimè cancellatis; anfractibus medio angulatis, tuberculorum acutiusculorum serie unicâ ad angulum armatis; laminâ columellari subtilissimè rugosâ, vividè rubro-aurantiâ, expansâ, supernè in sinu alto foliato, varicem prætereunte, desinente; labri exterioris margine expanso, rugoso-denticulato, vividè rubro-aurantio.*

THE FOLIATED RANELLA. Shell ovately conical, ventricose, everywhere encircled with numerous close-set granulated raised ridges, the interstices between which are very finely cancellated with longitudinal striæ; whorls angulated in the middle, armed upon the angle with a single row of rather sharp tubercles; columellar lamina very finely wrinkled, bright reddish orange, expanded, extending at the upper part into a lofty foliated sinus, deposited by the side of the varix; margin of the outer lip expanded, rugosely denticulated, bright reddish orange.

BRODERIP, Zool. Journal, vol. ii. p. 199. pl. 11. Supp. f. 1.

DESHAYES, Lamarck's Anim. sans vert. 2nd edition, vol. ix. p. 535.

Ranella crumena, Kiener (not Lamarck).

Hab. Mauritius?

It is really a most unpardonable error for M. Kiener to have confounded this beautiful and very characteristic species with the *Ranella crumena* (vide Pl. IV.), after the

extreme care taken by Mr. Broderip eighteen years since to distinguish them. In the 'Zoological Journal' for 1826, the two species are not only described by that accomplished writer with the most elaborate pains, but figured with great accuracy side by side, to exhibit their distinctness by comparison. Carelessness in scientific observation engenders endless confusion, and I venture to caution M. Kiener lest he fall into the same estimation with his countrymen, as Mr. Perry has done with our own.

Species 9. (Mus. Cuming.)

Ranella Californica. *Ran. testâ acuminato-ovatâ, grandi, solidiusculâ, ventricosâ, varicibus fortissimè tuberculatis; anfractibus angulatis, tuberculis solidis grandibus subdistantibus armatis, transversim striatis, subgranosis, prope suturam obsoletè corrugatis; albidâ, luteo-castaneo variegatâ, cingulis castaneis angustis, interruptis, subdistantibus, ornatâ; columellâ exiliter rugosâ; canali brevissimo, latiusculo; aperturâ amplâ, faute albâ; labro crenato, supernè profundè sinuato.*

The Californian Ranella. Shell acuminately ovate, large, rather solid, ventricose, varices very strongly tubercled; whorls angulated, armed with rather distant large solid tubercles, transversely striated, slightly granulated, obsoletely wrinkled next the suture; whitish, variegated with yellowish chestnut and encircled with rather distant narrow interrupted chestnut bands; columella faintly wrinkled; canal very short, rather broad; aperture large, interior white; lip crenated, deeply sinuated at the upper part.

Hinds, Zoology of the Voyage of H.M.S. Sulphur, *Mollusca*, p. 12. pl. 2. fig. 4 and 5.

Hab. San Diego, California.

This fine shell approximates so closely to the *Ranella ventricosa* (Sp. 6.), that it presents to all appearance the same characters, merely, more fully developed and in more gigantic proportion; several specimens however were collected of the same uniform size and boldness of structure, with the columella slightly wrinkled, and with the tubercles on the spire larger and fewer in number than in that species.

11a

10

11b

12

13

15

14

RANELLA.

PLATE III.

Species 10. (Mus. Cuming.)

RANELLA CÆLATA. *Ran. testâ pyramidali-ovatâ, depressâ, subponderosâ, castaneo-fuscescente, striis costisque granoso-moniliformibus, nigricante-fuscescentibus, cingulatâ, anfractûs ultimi costis inferioribus confertioribus; columellâ granuloso-rugosâ, rugis albidis; labro planissimè fimbriato, supernè sinuato, fusco, radiatim albisulcato.*

THE CARVED RANELLA. Shell pyramidally ovate, depressed, rather ponderous, chestnut-brown, encircled with blackish brown, granuled, necklace-like ribs and striæ, lower ribs of the last whorl closer; columella granulously wrinkled, wrinkles white; lip very flatly fimbriated, sinuated at the upper part, brown, radiated with whitish grooves.

BRODERIP, Pro. Zool. Soc., 1832.

Hab. Panama (found under stones at low water); Cuming.

"This handsome species," says Mr. Broderip, "reminds the observer of some of the antique carved ornaments in oak and chestnut. The apex of the spire is generally eroded."

M. Kiener has erroneously abandoned the *Ranella cælata* as being the *Ranella semigranosa* of Lamarck, leading M. Pfeiffer, in his notice of the genus *Tritonium*, into the same speculative error. Mr. Broderip's account of the sculpture of the species in question does not very well accord with the *anfractûs ultimi dorso nudo* of Lamarck's *Ranella semigranosa*.

Species 11. (Mus. Cuming.)

RANELLA PUSTULOSA. *Ran. testâ ovatâ, subdepressâ, ponderosâ, castaneâ; anfractibus pustulorum grandium seriebus duabus tribusve livido-castaneis cingulatis; varicibus granuloso-liratis; columellâ granuloso-rugosâ, rugis albidis; labro planissimè fimbriato, supernè sinuato, fusco, radiatim albisulcato.*

THE PUSTULOUS RANELLA. Shell ovate, somewhat depressed, ponderous, chestnut-coloured; whorls encircled with two or three rows of large livid chestnut-coloured pimples; varices granulously ridged; columella granulously wrinkled, wrinkles white; lip very flatly fimbriated, sinuated at the upper part, brown, radiated with whitish grooves.

REEVE, Pro. Zool. Soc., 1844.

Hab. Ascension Island.

This shell approximates so closely to the *Ranella cælata* in the style and character of its sculpture, that a specimen or two of different ages seem all that is necessary to exhibit a complete specific connection between them; it has however been demonstrated by the researches of two gentlemen of perhaps the greatest practical experience, Mr. Cuming and Mr. Hinds, that no species of shell common to the western coast of South America has ever been discovered on the coast of Africa.

Species 12. (Mus. Cuming.)

RANELLA ARGUS. *Ran. testâ ovatâ, crassiusculâ, subdepressâ, varicibus planulatis; transversim striatâ, longitudinaliter plicato-nodosâ; pallidè lutescente-spadiceâ, castaneo fasciatâ, fasciis regularibus, numerosis, confertis; columellâ lævi, canali brevissimo; aperturâ amplâ, fauce albâ; labro intus crenato, prope canalem acutè dentato.*

THE ARGUS RANELLA. Shell ovate, rather thick, a little depressed, with the varices flat; transversely striated, longitudinally plicately noduled; pale yellowish bay, banded with chestnut-brown, bands regular, numerous, close-set; columella smooth, canal very short; aperture large, interior white; lip crenated within, sharply toothed near the canal.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 543.

Ranella polyzonalis, Encyclopédie Méthodique.

Hab. Cape of Good Hope (found in rocky places); Hennah.

Lamarck describes the *Ranella Argus* as being ocellated; I have not however made mention of the appearance which suggested the name of the hundred-eyed monster for this shell, because it is accidental. The transverse chestnut-brown bands pass with regularity directly over the nodules, and they merely become white or ocellated by the colouring matter being occasionally worn off.

Species 13. (Mus. Cuming.)

RANELLA VEXILLUM. *Ran. testâ fusiformi-ovatâ, varicibus planulatis, liris depressis transversim cælatâ,*

liris subtiliter nodulosis, subangustis, numerosis, confertis, interstitiis elevato-striatis; pallidè lutescente-spadiceâ, liris castaneo-fuscis; columellâ rugosâ, canali brevi; aperturâ amplâ, fauce albâ; labro intus crenulato.

The flag Ranella. Shell fusiformly ovate, with the varices flattened, transversely carved with depressed ridges, ridges finely noduled, rather narrow, numerous, close-set, the interstices carved with raised striæ; pale yellowish bay, ridges chestnut-brown; columella wrinkled, canal short; aperture large, interior white; lip crenulated within.

Sowerby, Jun., Conch. Illus., *Ranella*, f. 3.

Triton Ranelliformis, King, Zool. Journ. vol. v. p. 347.

Hab. Island of Chiloe, and Conception, coast of Chili, South America (found in rocky places at the depth of from three to six fathoms); Cuming.

This shell has been very properly separated from the preceding species by Capt. King, whose specific name becomes nullified by the change of genera. It differs from it in being of a lighter and more fusiform structure, in the chestnut bands being narrower and more raised, the columella being wrinkled, and in the outer lip being devoid of any Monoceros-like dentition.

Species 14. (Mus. Cuming.)

Ranella ponderosa. *Ran. testâ acuminato-ovatâ, crassâ, ponderosâ, varicibus valdè prominentibus; anfractibus supernè leviter angulatis, granulorum seriebus cingulatis, alternis granulis grandibus, bipartitis; rubido-fuscâ, lutescente; columellâ granulatâ et rugosâ; canali brevi, subrecurvo; labro plano-incrassato, granulato, supernè sinuato.*

The heavy Ranella. Shell acuminately ovate, thick, heavy, with the varices very prominent; whorls slightly angulated at the upper part, encircled with rows of granules, alternate rows with the granules larger, bipartite; yellow-tinged reddish brown; columella granulated and wrinkled; canal short, a little recurved; lip flatly thickened, granulated, sinuated at the upper part.

Reeve, Pro. Zool. Soc., 1844.

Hab. ——?

The sculpture of this shell approaches very nearly to that of the *Ranella cælata*; it only requires however a slight examination of the specimens before me in different stages of growth, to see that they are specifically distinct.

Species 15. (Mus. Cuming.)

Ranella margaritula. *Ran. testâ ovatâ, utrinque attenuatâ, varicibus angustis; anfractibus in medio angulatis, ad angulum depresso-tuberculatis, transversim subtilissimè granuloso-striatis, striis confertis, alternis minoribus; rubido-fuscâ; columellâ rugosâ, depressione concavâ notatâ; aperturâ ovatâ, utrâque extremitate canaliculatâ, fauce violaceâ; labro rugoso.*

The little pearled Ranella. Shell ovate, attenuated at each end, with the varices narrow; whorls angulated in the middle, depressly tubercled on the angle, transversely very finely granulously striated, striæ close-set, alternate smaller; dark reddish brown; columella wrinkled, marked with a peculiar hollow depression; aperture ovate, canaliculated at each extremity, interior faintly tinged with violet; lip wrinkled.

Deshayes, Voy. de Bellanger dans l'Inde, Zool. pl. 3. f. 13 to 15.

Ranella neglecta, Sowerby, Jun.

This species was not neglected, as Mr. Sowerby supposed, having been described and figured by M. Deshayes in the Zoology to Belanger's 'Voyage in India'; the omission is, however, not to be wondered at, when it is considered that the work above noted is one of very limited access in this country. M. Deshayes notices this species as approximating to the *Ranella bufonia*; this is, perhaps, a mistake: the *Ranella crumena* is the species to which it so closely approaches, both in form and in detail of sculpture, though very inferior in size.

17 a

16

18 a

17 b

18 b

19

RANELLA.

PLATE IV.

Species 16. (Mus. Cuming.)

RANELLA NOBILIS. *Ran. testâ oblongo-ovatâ, depressâ, crassiusculâ; spirâ acuminatâ, varicibus angustis, radiatim stellatis; anfractibus granuloso-liratis, præcipuè super varices, in medio tuberculatis, anfractu ultimo tuberculorum seriebus duabus armato; albidâ, fuscescente subtiliter maculosâ; columellâ fortiter rugosâ; aperturâ oblongâ, utrinque canaliculatâ, fauce albâ; labro fortiter rugoso.*

THE NOBLE RANELLA. Shell oblong-ovate, depressed, rather thick; spire acuminated, varices narrow, radiately starred; whorls granulously ridged, especially over the varices, tuberculated in the middle, last whorl armed with two rows of tubercles; whitish, finely spotted with light brown; columella strongly wrinkled; aperture oblong, canaliculated at both ends, interior white; lip strongly wrinkled.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The form of this noble species is somewhat intermediate between that of the *Ranella pulchra*, or "Finned Frog," and the ordinary type of the genus, the varices exhibiting an indication of that peculiar star-like radiation common to the former, whilst the aperture is of an oblong canaliculated form, with the wrinkled lip and columella of the latter. The sculpture most resembles that of the *Ranella foliata*.

Species 17. (Fig. *a* and *b*, Mus. Cuming.)

RANELLA CRUMENA. *Ran. testâ ovatâ, ventricosâ; spirâ breviusculâ, acutâ; anfractibus subtilissimè granuloso-striatis, in medio acutissimè tuberculatis, anfractu ultimo tuberculorum seriebus tribus distantibus armato; albido-spadiceâ, fusco juxta tuberculos maculatâ; columellâ rugosâ, aurantio-rubro tinctâ; aperturâ subamplâ, utrinque canaliculatâ; labro planissimo-effuso, subindistinctè denticulato, aurantio-rubro tincto.*

THE LEATHERN-PURSE RANELLA. Shell ovate, ventricose; spire rather short, sharp; whorls very finely granulously striated, very sharply tubercled in the middle, last whorl armed with three distant rows of tubercles; light bay-colour, spotted with brown next the tubercles; columella wrinkled, stained with orange-red; aperture rather large, canaliculated at both ends; lip flatly effused, rather indistinctly denticulated, stained with orange-red.

LAMARCK (not Kiener), Anim. sans vert. (Deshayes' edit.), vol. ix. p. 545; Enc. Méth., pl. 412. f. 3.

Ranella elegans, Kiener (not of Beck).

Murex rana (*pars*?), Linnæus.

Ranella crumenoides, Blainville.

Ranella rana, Anton.

Hab. Ceylon; Dr. Siebald.

Variety β. Fig. *a*.

Testâ fuscescente et cærulescente variâ, maculis fuscis juxta tuberculos saturatioribus, seriebus granularibus alternatim majoribus.

Shell variegated with light brown and blue, brown spots next the tubercles of much deeper colour, rows of granules alternately larger.

Ranella Cavitensis, Beck.

Hab. Cavite, Bay of Manila (found in sandy mud at low water); Cuming.

No one can fail to distinguish this characteristic and well-known species, which has been referred, I think erroneously, by Lamarck, Anton and others to the *Murex rana* of Linnæus, for which see *Ranella albivaricosa*, Sp. 2.

M. Kiener (Curator of Lamarck's collection!) has described and figured an example of the *Ranella foliata* for the *Ranella crumena*, and one of the *Ranella crumena* for the *Ranella elegans*.

Species 18. (Fig. *a*, Mus. Stainforth; Fig. *b*, Mus. Cuming.)

RANELLA CRASSA. *Ran. testâ fusiformi-ovatâ, depressâ, crassâ; spirâ acuminatâ; varicibus solidis, retusis; anfractibus medio angulatis, undiquè granulatis, granulis ad angulum plus minusve fortioribus; cinereo-cærulescente, fulvo subindistinctè fasciatâ; columellâ rugosâ; aperturâ elongato-ovatâ, utrinque fortiter canaliculatâ; labro dentato, luteo-aurantio pallidissimè tinctâ.*

THE THICK RANELLA. Shell fusiformly ovate, depressed, thick; spire acuminated; varices solid, blunt; whorls slightly angulated in the middle, everywhere granulated, granules more or less strong upon the angle; ashy blue, rather indistinctly banded

with pale yellow; columella wrinkled; aperture elongately ovate, strongly canaliculated at both ends; lip toothed, faintly tinged with yellowish orange..

Deshayes, Note in new edit. Lamarck, Anim. sans vert., vol. ix. p. 547.

Murex crassus, Dillwyn.

Ranella granulata, Lamarck.

Hab. ——?

I am glad to follow M. Deshayes in giving my excellent countryman Mr. Dillwyn the credit of having first distinguished this interesting species according to the Linnæan form of nomenclature. Although most of the *Ranellæ* are more or less granulated, none are studded with such evenness and regularity as the *Ranella crassa*.

Species 19. (Mus. Cuming.)

Ranella affinis. *Ran. testâ pyramidali, crassâ, ponderosâ, depressiusculâ, varicibus graniferis; anfractibus leviter angulatis, tuberculis parvis retusis granulisque minimis, seriebus unicis, alternatim cinctis, tuberculis ad angulum bipartitis; carneo-albidâ, rubido-castaneo plus minusve tinctâ et maculatâ, apicem versus rosaceâ; columellâ multirugosâ, pallidè carneolâ, supernè fuscescente tinctâ; aperturâ ovatâ, utrinque leviter canaliculatâ; labro incrassato, dentato, pallidè carneolo.*

The affined Ranella. Shell pyramidal, thick, heavy, rather depressed; whorls slightly angulated, encircled alternately with single rows of small blunt tubercles and exceedingly minute granules, tubercles on the angle bipartite; fleshy white, more or less stained and spotted with reddish chestnut, rose-tinted towards the apex; columella much wrinkled, pale flesh-coloured, stained with light brown at the upper part; aperture ovate, slightly canaliculated at both ends; lip thickened, tooth pale flesh-coloured.

Broderip, Pro. Zool. Soc., 1832.

Ranella granifera, var., Kiener.

Hab. Island of Annaa (Chain Island), Pacific Ocean, and Philippine Islands (found on the reefs); Cuming.

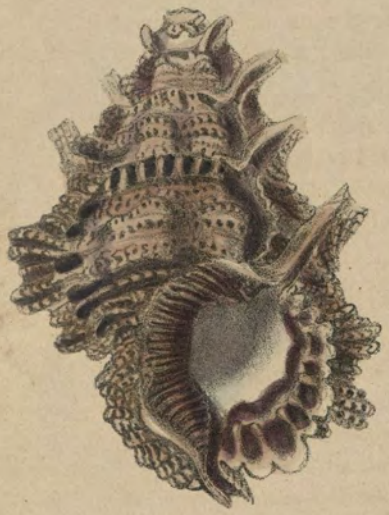
This species is certainly affined to the *Ranella granifera*, but no one who has seen the shell could venture to assert that it is not specifically distinct. M. Kiener should be careful neither to abolish nor confound species without due examination. The *Ranella affinis*, of which Mr. Cuming has collected specimens both at the Philippine and Pacific Islands, is a heavy ponderous shell, exhibiting a style of tubercular granulation which is peculiar to it; it is not banded with white, as Lamarck describes the *Ranella granifera* to be, and a still more characteristic feature in the colour of this shell is, that the first two or three whorls are perfectly pink.

20

21 a

21 b

22



23 a

23 b

24

RANELLA.

PLATE V.

Species 20. (Mus. Cuming.)

RANELLA CRUENTATA. *Ran. testâ ovatâ, vix depressâ; spirâ breviusculâ; anfractibus transversim granulatis et costatis, prope suturam corrugatis, in medio angulatis, ad angulum granuloso-tuberculatis, anfractu ultimo tuberculorum seriebus duabus armato; albidâ, fusèscente variâ; columellâ albâ, maculis plurimis cruentis quadratis vividè tinctâ; aperturâ subrotundâ, utrinque leviter canaliculatâ; labro incrassato, denticulato, radiatim sulcato.*

THE BLOOD-SPOTTED RANELLA. Shell ovate, scarcely depressed; spire rather short; whorls transversely granulated and ribbed, wrinkled near the suture, angulated in the middle, granulously tubercled on the angle, last whorl armed with two rows of tubercles; whitish, variegated with light brown; columella white, vividly stained with several square blood-red spots; aperture nearly round, slightly canaliculated at both ends; lip thickened, denticulated, radiately grooved.

SOWERBY, Jun., Conch. Illus., *Ranella*, fig. 5 and 5*.
Hab. Island of Ticao (found on the reefs); Cuming.

The blood-red columellar spots constitute a very peculiar feature in this shell; a similar character is however represented by lines in the *Ranella verrucosa*.

Species 21. (Fig. *a* and *b*, Mus. Cuming.)

RANELLA RUGOSA. *Ran. testâ ovatâ; spirâ abbreviato-pyramidali; anfractibus liris subdistantibus, peculiariter rugoso-granulatis, cinctis, in medio angulatis, gibbosis, ad angulum indistinctè tuberculatis, tuberculis retusis, bipartitis; albidâ, fuscescente variâ, granulis, albis; columellâ subrugosâ, depressione concavâ; aperturâ utrinque canaliculatâ; labro dentato et sulcato.*

THE WRINKLED RANELLA. Shell ovate; spire shortly pyramidal; whorls encircled with rather distant fine ridges granulated in a peculiarly wrinkled manner, angulated in the middle, gibbous, indistinctly tubercled upon the angle, tubercles blunt, bipartite; whitish, variegated with light brown, granules white; columella slightly wrinkled, with a hollow depression; aperture canaliculated at both ends; lip toothed and grooved.

SOWERBY, Jun., Conch. Illus., *Ranella*, fig. 7.
Hab. Bay of Manila; Cuming.

Mr. Cuming possesses three specimens of this very rare and interesting species in different stages of growth, each exhibiting the same peculiar style of granulation, one from "Old Humphrey's" collection, the others found by himself on the sands at the entrance to the bay of Manila.

Species 22. (Mus. Saul.)

RANELLA ELEGANS. *Ran. testâ elongato-ovatâ, varicibus tuberculato-muricatis; anfractibus transversim exiliter granuloso-striatis, prope suturam longitudinaliter corrugatis, infra seriatim tuberculato-muricatis; pallidè fulvâ, fasciis fuscis subdistantibus angustis vividè pictâ; columellâ multirugosâ, nitidâ; aperturâ oblongo-ovatâ, utrinque canaliculatâ, canali subascendente; labro dentato, aurantio-lutescente pallidè tincto.*

THE ELEGANT RANELLA. Shell elongately ovate, with the varices armed with prickly tubercles; whorls faintly granulously striated across, longitudinally wrinkled near the suture, prickly tubercled beneath; yellowish bay, vividly painted with rather distant narrow brown bands; columella covered with fine close-set wrinkles, shining; aperture oblong-ovate, canaliculated at both ends, canal turned upwards; lip toothed, tinged with orange-yellow.

BECK, Sowerby, Jun., Conch. Illus., *Ranella*, f. 17.
Hab. Island of Nicobar.

M. Kiener having figured a specimen of the *Ranella crumena* for the *Ranella elegans*, I beg especial attention to the very characteristic example of the species here figured from the collection of Miss Saul.

Species 23. (Fig. *a*, Mus. Saul; Fig. *b*, Mus. Cuming.)

RANELLA BUFONIA. *Ran. testâ ovatâ, crassâ, ponderosâ, varicibus canaliferis; anfractibus undiquè granulatis et punctatis, prope suturam fortiter corrugatis, in medio angulatis, ad angulum rudè tuberculato-nodosis; albidâ, puncturis fuscis; columellâ subexcavatâ, corrugatâ, albâ; aperturâ rotundato-ovatâ, supernè in canalem elevatum desinente, fauce albâ; labro fortiter denticulato.*

The toad-like Ranella. Shell ovate, thick, heavy, varices canaliferous; whorls everywhere granulated and punctured, strongly wrinkled near the suture, angulated in the middle, rudely tubercularly knobbed about the angle; whitish, punctures brown; columella slightly excavated, wrinkled, white; aperture rotundately ovate, ending upwards in an elevated canal, interior white; lip strongly denticulated.

Variety β. Fig. *a*.

Testâ rubido-nigricante maculatâ et variegatâ, columellâ labroque intus rubido-nigricante vividè tinctis.

Shell spotted and variegated with reddish black, columella and lip vividly stained within with the same colour.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 546.

Murex bufonius, Gmelin.

Hab. Island of Capul, Philippines (found under coral at low water); Cuming.

This species may be easily recognised by the remarkable canaliculated structure of the varices.

The richly coloured variety which I have here specified is the shell figured in Chemnitz, Conch., which M. Deshayes proposes to suppress (vide note in new edition of Lamarck, Anim. sans vert., p. 546). I think, however, Lamarck was perfectly correct in assigning it to the *Ranella bufonia*.

Species 24. (Mus. Brit.)

Ranella verrucosa. *Ran. testâ ovatâ, gibbosâ, solidâ, spirâ acuminatâ; varicibus indistinctis; anfractibus medio angulatis, tuberculis uniseriatim cinctis, anfractu ultimo tuberculorum seriebus tribus armato, tuberculis lævibus, subrotundis, verrucis grandibus similimis; albidâ, tuberculis ad summitatem purpureo-fuscis; columellâ albâ, rufo-lineatâ; aperturâ ovatâ, utrinque leviter canaliculatâ; labro incrassato, radiatim sulcato.*

The warty Ranella. Shell ovate, gibbous, solid; spire acuminated; varices indistinct; whorls angulated in the middle, encircled with a single row of tubercles, last whorl armed with three rows of tubercles, tubercles smooth, nearly round, very like large warts; white, tubercles purple-brown at the top; columella white, marked with red lines; aperture ovate, slightly canaliculated at both ends; lip thickened, radiately grooved.

Sowerby, Jun., Conch. Illus., *Ranella*, f. 20.

Hab. —— ?

This very remarkable species, of which there is a specimen in the British Museum, has the columella marked with red lines, somewhat after the manner of the *Ranella cruentata*. The large wart-like tubercles with which it is encircled are peculiarly characteristic.

25

26

27

28

29a

29b

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

RANELLA.

PLATE VI.

Species 25. (Mus. Cuming.)

RANELLA SEMIGRANOSA. *Ran. testâ elongatâ, turritâ, tenuiculâ, varicibus angustis, subindistinctis; anfractibus transversim exiliter granuloso-liratis, liris anfractûs ultimi subevanidis, subdistantibus, interstitiis striatis; albidâ, fuscescente variè tinctâ; columellâ subexcavatâ, minutissimè rugosâ, supernè callositate armatâ; aperturâ ovatâ, utrinque canaliculatâ; labro leviter denticulato.*

THE HALF-GRAINED RANELLA. Shell elongated, turreted, rather thin, varices narrow, rather indistinct; whorls transversely faintly granulously ridged, ridges almost disappearing on the last whorl, rather distant, interstices striated; whitish, variously stained with light brown; columella a little excavated, very minutely wrinkled, armed at the upper part with a callosity; aperture ovate, canaliculated at both ends; lip slightly denticulated.

LAMARCK (not of Kiener), Anim. sans vert. (Deshayes' edit.), vol. ix. p. 548.

Hab. Island of Ticao, Philippines; Cuming.

Several examples of this species were collected by Mr. Cuming at the above-mentioned locality, all of the same uniform half-grained character.

Species 26. (Mus. Cuming.)

RANELLA CORIACEA. *Ran. testâ oblongo-ovatâ, depressiusculâ, spirâ subobtusâ, varicibus rotundatis; anfractibus undiquè creberrimè granulatis, transversim costatis, costis latis, interdum subobsoletis, irregulariter tumido-nodosis; aurantio-fuscescente; columellâ sparsim rugosâ; aperturâ ovatâ, utrinque leviter sinuatâ; labro intus radiatim denticulato.*

THE SHAGREEN RANELLA. Shell oblong-ovate, a little depressed, spire rather obtuse, varices rounded; whorls everywhere very closely granulated, transversely ribbed, ribs broad, sometimes nearly obsolete, armed here and there with swollen knobs; orange-brown; columella sparingly wrinkled; aperture ovate, slightly sinuated at both ends; lip radiately denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Ranella scrobiculator, var. Sowerby, Jun.

Hab. ——?

This interesting species, which Mr. Cuming possesses in different stages of growth, is the shell figured by Mr. G. B. Sowerby, Jun., in the 'Conchological Illustrations' as a variety of his *Ranella scrobiculator* (*Triton scrobiculator*, Lamarck and others); I think, however, with M. Deshayes, that it is "*une coquille qui me paraît toujours différente; j'en ait vu plusieurs exemplaires et plusieurs figures, et j'ai observé des différences spécifiques constantes. Cette soi-disant variété a plutôt les caractères des Ranelles que le* Scrobiculator *proprement dit, et c'est sans doute ce qui explique pourquoi un certain nombre de conchyliologues veulent que le* Scrobiculator *soit une Ranelle. Pour nous, qui en avons vu l'animal, c'est un Triton.*" Note in new edition of Lamarck's Anim. sans vert., vol. ix. p. 626.

Species 27. (Mus. Cuming.)

RANELLA ALBIFASCIATA. *Ran. testâ depresso-ovatâ, spirâ breviusculâ, acuminatâ; varicibus rotundis; anfractibus acutè angulatis, seriatim fortiter granulosis, interstitiis lævibus, granulis ad angulum majoribus; purpureo-fuscâ, zonâ albâ unicâ conspicuâ cingulatâ; varicibus fuscescentibus, granulis albidis; aperturâ ovatâ, utrinque canaliculatâ, supernè præcipuè; labro intus denticulato, albo.*

THE WHITE-BANDED RANELLA. Shell depressly ovate, spire rather short, acuminated; varices round; whorls sharply angled, encircled with rows of strong granules, the interstices between which are smooth, granules upon the angle larger; purple-brown, encircled with a single conspicuous white zone, granules white; aperture ovate, canaliculated at both ends, the upper especially; lip denticulated within, white.

SOWERBY, Jun., Conch. Illus., *Ranella*, f. 14.

Hab. Panama (found in coarse sand at the depth of ten fathoms); Cuming.

The *Ranella nana* is also a purplish shell encircled with a conspicuous white zone; care must therefore be taken to distinguish this species by its uniform granulated surface.

This species, like the *Ranella affinis*, is disposed of by M. Kiener, who seems to be totally unacquainted with it, as a variety of the *Ranella granifera*.

Species 28. (Mus. Cuming.)

RANELLA LIVIDA. *Ran. testâ ovato-turritâ, spirâ acuminatâ; anfractibus supernè depressis, ad suturam granulatis, infra lævibus, transversim noduloso-liratis, in medio tuberculorum seriebus duabus compressis armatis; lividâ, fuscescente variâ; columellâ subtiliter rugosâ; aperturâ ovatâ, utrinque sinuatâ; labro denticulato.*

THE LIVID RANELLA. Shell ovately turreted, spire acuminated; whorls depressed at the upper part, granulated at the suture, smooth beneath, transversely nodulously ridged, armed in the middle with two rows of compressed tubercles; livid, variegated with brown; columella finely wrinkled; aperture ovate, sinuated at both ends; lip denticulated.

REEVE, Pro. Zool. Soc., 1844.

Ranella granifera, Kiener (not of Lamarck).

Hab. Island of Annaa, Pacific Ocean (found on the coral reefs); Cuming.

I do not see how M. Kiener can identify this tuberculated shell with Lamarck's description of *Ranella granifera*, for which see Species 30.

Species 29. (Mus. Cuming.)

RANELLA NANA. *Ran. testâ ovatâ, vel oblongo-ovatâ, varicibus muricato-tuberculatis; anfractibus in medio acutè angulatis, ad angulum muricato-nodosis, supra infraque lævibus; cinereo-cærulescente, zonâ albâ unicâ, fasciisque fuscis angustis cinctâ; columellâ subrugosâ; aperturâ ovatâ, utrinque fortiter canaliculatâ; labro dentato.*

THE DWARF RANELLA. Shell ovate, or oblong-ovate, varices prickly tuberculated; whorls sharply angled in the middle, prickly noduled on the angle, smooth above and beneath; ashy-blue, encircled with a single white zone and several narrow brown bands; columella a little wrinkled; aperture ovate, strongly canaliculated at both ends; lip toothed.

SOWERBY, Jun., Conch. Illus., *Ranella*, f. 6.

Hab. Panama (found in coarse sand at the depth of ten fathoms); Cuming.

This is an exceedingly pretty species, in which the whorls are very neatly painted, leaving a broad white zone across the middle; the surface being entirely free from granulation.

Species 30. (Mus. Cuming.)

RANELLA GRANIFERA. *Ran. testâ oblongâ, turritâ, scabriusculâ, tenuiculâ, varicibus rotundis; anfractibus convexis, striis granosis cinctis, granis subacutis; albolutescente, rubido-fuscescente variè tinctâ, pallidè albifasciatâ, varicibus albimaculatis, maculis distantibus; columellâ subtilissimè rugosâ; aperturâ ovatâ, utrinque leviter sinuatâ; labro denticulato.*

THE GRANIFEROUS RANELLA. Shell oblong, turreted, somewhat rough, rather thin, varices round; whorls convex, encircled with rows of granules, granules rather sharp; whitish yellow, variously stained with brown, palely banded with white, varices spotted with white, spots distant; columella very finely wrinkled; aperture ovate, slightly sinuated on both sides; lip denticulated.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 548.

Hab. Philippine Islands; Cuming.

The figures which Lamarck cites for the illustration of this species do not all apply to the same. The shell here figured accords the most distinctly with his description, and I think there can be little doubt of its correct application.

32

33

35

34

36

38

37

39

41

40

RANELLA.

PLATE VII.

Species 31. (Mus. Metcalfe.)

(For figure see *Triton*, Plate XV. Fig. 57.)

RANELLA CAUDATA. *Ran. testâ trigono-elongatâ, Muriciformi, anfractibus supernè acutè angulatis, transversim costatis, longitudinaliter plicato-nodulosis; cinereo-olivaceâ; columellâ lævi, canali subelongato; labro intus peculiariter denticulato; aperturâ parvâ, fauce nigricante- aut purpureo-fuscâ.*

THE LONG-TAILED RANELLA. Shell triangularly elongated, Murex-shaped, whorls sharply angulated at the upper part, transversely ribbed, longitudinally plicately noduled; ashy olive or slate-colour; columella smooth, canal rather elongated; lip peculiarly denticulated; aperture small, interior blackish or dark purple-brown.

SAY, American Conchology, pl. 48.

The *Ranella caudata* does not appear to be at all known to continental conchologists; Pfeiffer ventures to quote it as synonymous with the *Ranella Muriciformis*, whilst Kiener has figured a shell for it (vide *Triton ficoides*) to which it has no reference whatever, though Mr. Say's representation is abundantly characteristic.

Species 32. (Mus. Cuming.)

RANELLA RHODOSTOMA. *Ran. testâ ovato-turbinatâ; spirâ acuminatâ; anfractibus supernè angulatis, transversim et longitudinaliter fortiter costatis, costis, superâ præcipuè, fortiter tuberculosis, tuberculis crispato-granulosis, granulorum serie unicâ costas intercurrente; albido-lutescente, roseo-fuscescente sparsim punctatâ; columellâ excavatâ, vividè roseâ, granulosâ, supernè et infernè rugosâ; aperturâ rotundâ, utrinque leviter sinuatâ; labro intus denticulato, roseo.*

THE ROSE-MOUTH RANELLA. Shell ovately turbinated; spire acuminated; whorls angulated at the upper part, transversely and longitudinally strongly ribbed, ribs, the upper rib especially, strongly tuberculated, tubercles granulated in a crisped manner, a single row of granules running between the ribs; whitish yellow, punctured here and there with pink; columella excavated, bright rose-colour, granulated, wrinkled at the upper and lower parts; aperture round, slightly sinuated above and below; lip denticulated within, rose-tinted.

BECK, Sowerby, Jun., Conch. Illus., *Ranella*, fig. 10.

Hab. Islands of Capul and Masbate, Philippines; Cuming.

An interesting and very distinct species.

Species 33. (Mus. Saul.)

RANELLA PLICATA. *Ran. testâ oblongâ, sub-Muriciformi; anfractibus rotundatis, scabris, longitudinaliter plicatis, in medio nodulosis; livido-olivaceâ, zonâ albidâ in medio cinctâ; columellâ lævi, canali longiusculo.*

THE PLICATED RANELLA. Shell oblong, somewhat Murex-shaped; whorls rounded, rough, longitudinally plicated, noduled round the middle; livid olive-colour, encircled round the middle with a narrow white zone; columella smooth, canal long.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The plicated growth of this shell is developed with the neatest regularity from the apex to the margin.

Species 34. (Mus. Cuming.)

RANELLA MURICIFORMIS. *Ran. testâ elongato-Muriciformi, plano-trigonâ; varicibus latiusculis, pinnatis; anfractibus supernè angulatis, ad angulum tuberculatis vel subfoliatis, transversim elevato-striatis, striis subremotis; columellâ lævi, canali longiusculo.*

THE MUREX-SHAPED RANELLA. Shell elongately Murex-shaped, flatly triangular; varices rather wide, pinnated; whorls angulated at the upper part, tubercled or subfoliated on the angle, elevately striated, striæ rather remote; columella smooth, canal long.

BRODERIP, Pro. Zool. Soc., 1832.

Hab. Bay of Montija, West Columbia (found in loose gravel at the depth of seven fathoms); Cuming.

This species may be distinguished by the flatly expanded pinnated character of the varices.

Species 35. (Mus. Belcher.)

RANELLA PECTINATA. *Ran. testâ elongato-Muriciformi, spirâ acuminatâ; varicibus obliquis, muricato-spinosis; anfractibus transversim liratis, supernè leviter angulatis, ad angulum tuberculatis, tuberculis bipartitis; columellâ lævi; canali elongato, recto; aperturâ ovali, labro intus obsoletè denticulato.*

THE PECTINATED RANELLA. Shell elongately Murex-shaped, spire acuminated; varices prickly spined; whorls transversely ridged, slightly angulated at the upper part, tuberculated on the angle, tubercles bipartite; columella smooth; canal elongated, straight; aperture oval, lip obsoletely denticulated within.

HINDS, Zoology of the Voyage of H.M.S. Sulphur, *Mollusca*, p. 13. pl. 4. f. 17 and 18.

Hab. San Blas, Mexico (in seven fathoms mud); Hinds.

An interesting addition to the genus *Ranella*, having very much the form of those species of the genus *Murex* familiarly known as the "snipes" or "woodcocks."

Species 36. (Mus. Cuming.)

RANELLA TUBERCULATA. *Ran. testâ pyramidali-ovatâ; anfractibus transversim striatis, tuberculis parvis subæqualibus undiquè seriatim ornatis; fulvâ aut cinereo-*

cærulescente, indistinctè albi-fasciatâ, tuberculis nigricantibus; columellâ lævi, excavatâ; canali breviusculo, recurvo; labro intus dentato, dentibus subremotis.

THE TUBERCULATED RANELLA. Shell pyramidally ovate; whorls transversely striated, ornamented over entire surface with rows of nearly equal small tubercles; yellowish or ashy blue, indistinctly banded with white, tubercles blackish; columella smooth, excavated; canal rather short, recurved; lip toothed.

BRODERIP, Pro. Zool. Soc., 1832.

Hab. Malacca; and, rarely, Pacific Islands.

An ancient species figured in Martini's Conch., vol. iv. pl. 128. f. 1229, which escaped the notice of Lamarck.

Species 37. (Mus. Cuming.)

RANELLA VENUSTULA. *Ran. testâ ovatâ, crassiusculâ, varicibus valdè obliquis; anfractibus transversim costatis, granulatis et punctatis, supernè angulatis, prope suturam corrugatis, ad angulum fortiter tuberculatis; columellâ excavatâ, nigricante-purpureâ, albigranulosâ; aperturâ rotundâ, utrinque canaliculatâ, fauce roseo-purpureâ; labro incrassato, nigri-purpureo.*

THE PRETTY RANELLA. Shell ovate, rather thick, with the varices very oblique; whorls transversely ribbed, granulated and punctured, angulated at the upper part, wrinkled next the suture, strongly tuberculated on the angle; columella excavated, blackish purple, covered with white granules; aperture round, canaliculated at both ends, interior rose-purple; lip thickened, blackish purple.

REEVE, Pro. Zool. Soc., 1844.

This species is remarkably characterized by its rich dark purple columella granulated with white.

Species 38. (Mus. Cuming.)

RANELLA SIPHONATA. *Ran. testâ ovatâ, crassiusculâ, varicibus perspicuè canaliculatis; anfractibus transversim rudè costatis et tuberculatis, undiquè granulatis et punctatis, prope suturam corrugatis; luteolâ; columellâ vix rugosâ, roseo-purpurascente; aperturâ rotundâ, fauce roseo-purpurascente, utrinque canaliculatâ, canali supero valdè elato-siphonato.*

THE SPOUTED RANELLA. Shell ovate, rather thick, varices prominently canaliculated; whorls transversely rudely ribbed and tubercled, everywhere granulated and punctured, corrugated near the suture; yellowish; columella scarcely wrinkled, rose-purple; aperture round, interior rose-purple, canaliculated at both ends, upper canal very elevately spouted.

Variety β.

Testâ albâ aut luteolâ, nigro-cærulescente fasciatâ et punctatâ; columellâ albâ, aperturæ fauce albâ.

Shell white or yellowish, banded and dotted with blackish blue or grey; columella white, interior white.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

I take this shell to be quite distinct from the dark variety of the *Ranella bufonia* to which it is allied.

Species 39. (Mus. Cuming.)

RANELLA TUBEROSISSIMA. *Ran. testâ ovatâ, varicibus perspicuè canaliculatis; anfractibus transversim rudè costatis, dorsim tuberosissimis, undiquè granulatis et punctatis, prope suturam corrugatis; albidâ, nigro-cærulescente punctatâ; columellâ lævi, croceâ; aperturâ rotundâ, vividè croceâ, utrinque canaliculatâ; canali supero elato-siphonato, supernè intus nigricante tincto; labro fortiter dentato.*

THE HUNCH-BACK RANELLA. Shell ovate, varices prominently canaliculated; whorls transversely rudely ribbed, very strongly humped at the back, everywhere granulated and punctured, corrugated near the suture; whitish, dotted with blackish blue; columella smooth, yellow; aperture round, bright yellow, canaliculated at both ends; upper canal elevately spotted, upper part stained within with black; lip strongly toothed.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine Islands; Cuming.

An extraordinary humped shell with a yellow mouth.

Species 40. (Mus. Cuming.)

RANELLA BITUBERCULARIS. *Ran. testâ ovatâ, spirâ acuminatâ, varicibus obliquis, confertis; anfractibus transversim striatis et liratis, albidis, plus minusve spadiceo-tinctis, tuberculis duobus spadiceis inter varices ornatis; canali paululùm elongato, ascendente.*

THE DOUBLE-TUBERCLED RANELLA. Shell ovate, spire acuminated, varices oblique, close-set; whorls transversely striated and ridged, whitish, more or less stained with reddish brown, ornamented with two reddish brown tubercles between each varix; canal a little elongated, turned upwards.

LAMARCK, Anim. sans vert. vol. ix. p. 548.

Hab. Philippine Islands; Cuming. China Sea, &c.

There are varieties with three tubercles or even more.

Species 41. (Mus. Cuming.)

RANELLA TRIQUETRA. *Ran. testâ elongato-Muriciformi, varicibus supernè mucronatis; anfractibus angulatis, ad angulum tuberculatis, supra lævibus, infra obsoletè liratis; livido-olivaceâ; columellâ lævi; canali longiusculo; aperturâ parvâ; labro vix denticulato.*

THE TRIANGULAR RANELLA. Shell elongately Murex-shaped, varices pointed at the upper part; whorls angulated, tubercled at the angle, smooth above, obsoletely ridged beneath; livid olive-colour; columella smooth; canal rather long; aperture small; lip scarcely denticulated.

Ranella Muriciformis, var., Sowerby, Jun.

REEVE, Pro. Zool. Soc., 1844.

Hab. San Diego, California; Nuttall.

Quite distinct in my opinion from the *R. Muriciformis*, which is a flat pinnated shell.

42

43

44a

45

44b

46

47

48

49

50

RANELLA.

PLATE VIII.

Species 42. (Mus. Cuming.)

RANELLA HASTULA. *Ran. testâ parvulâ, sublanceolatâ, depressâ, ancipiti; anfractibus transversim granoso-striatis, lamellis elevatis indistinctè diadematis; castaneo-fuscâ; columellâ lævi; canali brevi, recurvo; aperturâ parvâ.*

THE LITTLE SPEAR RANELLA. Shell very small, sublanceolate, depressed, two-edged; whorls transversely granulately striated, indistinctly crowned with small raised plates; dark chestnut-brown; columella smooth; canal short, recurved; aperture small.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This little dark granulated shell, though less pyramidal, is of similar structure to the *Ranella anceps.*

Species 43. (Mus. Cuming.)

RANELLA ANCEPS. *Ran. testâ parvâ, sublanceolatâ, depresso-pyramidali, ancipiti; anfractibus lævibus, nitidis, subobsoletè costatis, lamellis elevatis diadematis; albâ; columellâ lævi; canali brevi, recurvo; aperturâ parvâ, rotundâ.*

THE TWO-EDGED RANELLA. Shell small, sublanceolate, depressly pyramidal, two-edged; whorls smooth, shining, crowned with small raised plates; white; columella smooth; canal short, recurved; aperture small, round.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 550.

Ranella pyramidalis, Broderip.

Murex anceps, Pfeiffer.

Hab. Panama (found on the reefs); Cuming.

The longitudinal line which Mr. Broderip describes as traversing the whole length of the shell, both on the upper and under sides, is somewhat imaginary. It is suggested, no doubt, by the natural elevation of the sutural plates, and has no analogy with the varices.

Species 44. (Fig. *a* and *b*, Mus. Cuming.)

RANELLA PUSILLA. *Ran. testâ pyramidali-ovatâ, varicibus obliquis; anfractibus decussatim costatis, costis ad decussationem granosis, interstitiis subtilissimè striatis; albâ, roseo luteoque variè tinctâ et maculatâ; canali breviter recurvo; aperturâ parvâ.*

THE SMALL RANELLA. Shell pyramidally ovate, varices oblique; whorls decussately ribbed, ribs grained at the point of crossing, interstices very finely striated; white, variously stained and spotted with pink and yellow; canal shortly recurved; aperture small.

BRODERIP, Pro. Zool. Soc., 1832.

Hab. Lord Hood's Island, Pacific Ocean and Philippine Islands (found on the reefs); Cuming.

The specimens found by Mr. Cuming at Lord Hood's Island in the Pacific are pale and discoloured, whilst those from the Philippines are more or less diversified with pink and yellow. They may prove to be distinct species, but I cannot consider them so at present.

Species 45. (Mus. Cuming.)

RANELLA NITIDA. *Ran. testâ ovatâ, planissimo-depressâ, varicibus latis, pinnatis; anfractibus transversim tuberculato-nodulosis, varices super liratis; nigro-purpureâ, interdum albifasciatâ; columellâ lævi, canali longiusculo; aperturâ ovali, parvulâ; labro intus denticulato.*

THE NEAT RANELLA. Shell ovate, flatly depressed; varices broad, pinnated; whorls transversely tuberculously noduled, ridged over the varices; blackish purple, sometimes banded with white; columella smooth, canal rather long; aperture oval, very small; lip denticulated within.

BRODERIP, Pro. Zool. Soc., 1832.

Hab. Bay of Caraccas, West Columbia; Cuming.

The flat radiating winged varices give this shell a very characteristic appearance.

Species 46. (Mus. Cuming.)

RANELLA ROSEA. *Ran. testâ pyramidali-ovatâ, varicibus subobliquis; anfractibus supernè leviter angulatis, transversim striatis, undiquè seriatim tuberculato-nodulosis, nodulis ad angulum bipartitis; vividè coccineo-roseâ, nodulis luteis; canali breviter recurvo, aperturâ parvâ.*

THE ROSE RANELLA. Shell pyramidally ovate, varices rather oblique; whorls slightly angulated, transversely striated, entire surface covered with rows of tubercle-like nodules, of which those on the angle are bipartite; bright scarlet-rose, nodules yellow; canal shortly recurved, aperture small.

Reeve, Pro. Zool. Soc., 1844.
Hab. Island of Ticao, Philippines; Cuming.

This pretty little species exhibits a very agreeable contrast of colour, namely, yellow nodules upon a bright scarlet-rose ground.

Species 47. (Mus. Cuming.)

Ranella pulchra. *Ran. testâ fusiformi-ovatâ, plano-depressâ, varicibus latissimis, stellato-pinnatis; anfractibus transversim striatis, costis transversis et longitudinalibus, ad decussationem nodosis, clathratis, costis transversis prominentioribus, varices super radiantibus; albidâ, spadiceo aut violascente pallidè tinctâ; columellâ lævi; canali longiusculo; aperturâ parvâ, rotundatâ.*

The beautiful Ranella. Shell fusiformly ovate, flatly depressed, with the varices very wide, stellately pinnated; whorls transversely striated, latticed with transverse and longitudinal ribs, noduled at the point of crossing, transverse ribs the more prominent, radiating over the varices; whitish, palely tinged with light bay or violet; columella smooth; canal rather long; aperture small, rounded.

Gray, Sowerby, Jun., Conch. Illus., *Ranella*, f. 19.
Ranella perca, Deshayes.
Hab. Island of Luzon, Philippines; Cuming.

I cannot agree with M. Deshayes in giving priority to the specific name assigned to "The finned Frog" by Mr. Perry. That author has long forfeited the notice of scientific men by his absurd names and pantomimic display of figures.

Species 48. (Mus. Cuming.)

Ranella cuspidata. *Ran. testâ acuminato-ovatâ, crassiusculâ, solidâ, varicibus obliquis; anfractibus transversim noduloso-liratis, tuberculis duobus obtusis inter varices ornatis; albidâ, luteo-aurantio plus minusve tinctâ; columellâ lævi; canali breviusculo, recurvo; aperturâ parvâ, ovato-rotundatâ.*

The spear-point Ranella. Shell acuminately ovate, rather thick, solid, with the varices oblique; whorls transversely nodulously ridged, ornamented between the varices with two blunt tubercles; whitish, more or less stained with yellowish orange; columella smooth; canal rather short, recurved; aperture small, ovately rounded.

Reeve, Pro. Zool. Soc., 1844.
Hab. Islands of Capul and Ticao, Philippines; Cuming.

This shell has somewhat the form and general character of the *Ranella bitubercularis*, though it is of more solid growth and of a peculiar orange-yellow colour.

Species 49. (Mus. Cuming.)

Ranella gyrinus. *Ran. testâ acuminato-ovatâ, anfractibus transversim striatis, liris transversis et longitudinalibus decussatis, ad decussationem nodulosis; albâ aut luteolâ, zonis castaneo-fuscis cinctâ; columellâ lævi; canali breviusculo, recurvo; aperturâ rotundâ; labro intus denticulato.*

The tadpole Ranella. Shell acuminately ovate, whorls transversely striated, decussated with transverse and longitudinal ridges, noduled at the point of crossing; white or yellowish, encircled with chestnut-brown zones; columella smooth; canal rather short, recurved; aperture round; lip denticulated within.

Deshayes, Note in new edit. of Lamarck's Anim. sans vert., vol. ix. p. 549.
Murex gyrinus, Linnæus.
Ranella ranina, Lamarck.
Hab. Mediterranean; Philippi: Island of Ticao, Philippine Islands; Cuming.

Well distinguished by the dark chestnut zone which encircles each whorl round the middle.

Species 50. (Mus. Cuming.)

Ranella lævigata. *Ran. testâ rotundato-ovatâ, ventricosâ, spirâ brevissimâ; anfractibus transversim striatis, supernè angulatis, ad angulum regulariter nodosis; albidâ, spadiceo pallidè tinctâ; columellâ rugosâ; canali brevissimo; aperturâ amplâ, utrinque canaliculatâ, fauce albâ; labro intus denticulato.*

The smooth Ranella. Shell rotundately ovate, ventricose, with a very short spire; whorls transversely striated, angulated at the upper part, regularly noduled on the angle; white, palely stained with light bay; columella wrinkled; canal very short; aperture large, canaliculated at both ends; interior white; lip denticulated within.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ix. p. 550.
Hab. —— ?

The recent analogue of a shell known to Lamarck in a fossil state only.

RANELLA.

[*Temporary Index.*]

	Plate	Species
affinis, *Broderip*	IV.	19
albifasciata, *Sowerby, Jun.*	VI.	27
albivaricosa, *Reeve*	I.	2
anceps, *Lamarck*	VIII.	43
Argus, *Lamarck*	III.	12
Beckii, Kiener	I.	1
bitubercularis, *Lamarck*	VII.	40
bufonia, *Lamarck*	V.	23
cælata, *Broderip*	III.	10
Californica, *Hinds*	II.	9
candisata, *Lamarck*	I.	5
caudata, *Say*	VII.	31
Cavitensis, Beck	IV.	17
coriacea, *Reeve*	VI.	26
crassa, *Deshayes*	IV.	18
cruentata, *Sowerby, Jun.*	V.	20
crumena, *Lamarck*	IV.	17
cuspidata, *Reeve*	VIII.	48
elegans, *Beck*	V.	22
foliata, *Broderip*	II.	8
gigantea, *Lamarck*	I.	3
granifera, *Lamarck*	VI.	30
granulata, Lamarck	IV.	18
gyrinus, *Deshayes*	VIII.	49
hastula, *Reeve*	VIII.	42
lævigata, *Lamarck*	VIII.	50
leucostoma, *Lamarck*	I.	4
livida, *Reeve*	VI.	28
margaritula, *Deshayes*	III.	15
Muriciformis, *Broderip*	VII.	34
nana, *Sowerby, Jun.*	VI.	29
neglecta, *Sowerby, Jun.*	III.	15
nitida, *Broderip*	VIII.	45
nobilis, *Reeve*	IV.	16
pectinata, *Hinds*	VII.	35
perca, Deshayes	VIII.	47
plicata, *Reeve*	VII.	33
polyzonalis, Enc. Méth.	III.	12
ponderosa, *Reeve*	III.	14
pulchra, *Gray*	VIII.	47
pusilla, *Broderip*	VIII.	44
pustulosa, *Reeve*	III.	11
pyramidalis, *Broderip*	VIII.	43
rana, Anton	IV.	17
ranina, De Blainville	I.	3
ranina, Lamarck	VIII.	49
reticularis, Deshayes	I.	3
rhodostoma, *Beck*	VII.	32
rosea, *Reeve*	VIII.	46
rugosa, *Sowerby, Jun.*	V.	21
semigranosa, *Lamarck*	VI.	25
siphonata, *Reeve*	VII.	38
spinosa, *Lamarck*	II.	7
subgranosa, *Beck*	I.	1
tenuis, Potièz and Michaud	II.	6
triquetra, *Reeve*	VII.	41
tuberculata, *Broderip*	VII.	36
tuberosissima, *Reeve*	VII.	39
ventricosa, *Broderip*	II.	6
venustula, *Reeve*	VII.	37
verrucosa, *Sowerby, Jun.*	V.	24
vexillum, *Sowerby, Jun.*	III.	13

MONOGRAPH

OF THE GENUS

M I T R A.

"But what created mind can comprehend
Their number, or the wisdom infinite
That brought them forth, but hid their causes deep."—*Milton.*

1

2

3

5

4

6

MITRA.

PLATE I.

Genus MITRA, Lamarck.

Testa vel oblongo-ovata, vel fusiformi-elongata, spirâ acuminatâ, apice sæpissimè acuto; anfractibus nunc lævibus, nunc costatis; columellâ basim versus plus minusve recurvâ, plicatâ, plicis infimis minimis; aperturâ angustâ, testæ longitudinem interdum ferè æquante; labro subincrassato, plerumque denticulato.

Shell oblong-ovate or fusiformly elongated, spire acuminated, apex most frequently sharp; whorls sometimes smooth, sometimes ribbed; columella more or less recurved towards the base, plaited, lowest plaits the smallest; aperture narrow, sometimes nearly equalling the length of the shell; lip somewhat thickened, generally denticulated.

The genus *Mitra*, instituted by Lamarck, is the most numerous division of that rich and rare family of pectinibranchiate gastropods, the *Columellata*, and the species have been much admired for their symmetry and variety of colour. Although the shells of this genus were called "Mitres" soon after the revival of letters, Linnæus still arranged them with the Volutes; they were, however, separated by Lamarck on account of their narrow turriculated growth and other differences, not the least important of which are, that the apex is never papillary, and the plaits, instead of increasing, diminish in size towards the base. Some species of *Mitra* approximate very closely to the *Columbellæ*, but may be easily distinguished by remarking the strong generic difference that exists between the columellar plaits of the *Mitræ*, which entwine the pillar of the shell throughout its entire growth, and the plait-like denticulations of the *Columbellæ*, which are not developed until the shell arrives at maturity.

Lamarck described about eighty species of *Mitra*, all of which, with the exception of one or two, I have identified in the collections of Mr. Cuming and Mr. Norris; several of these were previously described as Volutes; some by Linnæus, and some by Dr. Solander under other specific names in his catalogue of the Duchess of Portland's collection, which, as they exist only in manuscript, cannot in justice to foreign authors be quoted or considered of any authority. To Lamarck's species were added about fifty, described by Swainson in the 'Exotic Conchology,' 'Zoological Illustrations,' and 'Proceedings of the Zoological Society' (through Mr. Broderip) for 1835; and I have now as many new species as will increase the number to considerably above two hundred.

[Mr. Swainson contributed greatly to the interest of the genus *Mitra* by the zeal and enthusiasm with which he both described and illustrated the species just recorded; that eminent zoologist, however, towards the latter part of his career in this country, became infatuated by certain hypothetical notions of systematic arrangement in which he entirely lost himself. He conceived that every character, however unimportant, is represented by the most perfect analogy throughout the different classes of animals, within very prescribed limits; that the *Volutes* and *Mitres* for example "represent the *Rasorial* type among *Birds*, the *Ungulata* among *Quadrupeds*, and the *Thysanura* among *Insects*." These flights of analogy he proposed to exhibit in circles; and they revolved in his imagination in such mystical order as to reveal the most incomprehensible affinities.]

Species 1. (Mus. Cuming.)

MITRA LENS. *Mitr. testâ subobeso-fusiformi, turritâ; anfractibus longitudinaliter plicato-costatis, costis latis, rudibus, plano-obtusis, transversim impresso-striatis, striis subdistantibus, duabus medianis inter costas peculiariter foraminatis; cinereo-violaceâ, epidermide corneâ nigricante-olivaceo indutâ; columellâ quadriplicatâ, plicis grandibus; aperturæ fauce purpurascente-cinereâ.*

THE LENTIL MITRE. Shell rather stoutly fusiform, turreted; whorls longitudinally plicately ribbed, ribs broad, rude, flatly obtuse, transversely impressly striated, striæ rather distant, the two middle striæ peculiarly holed between the ribs; ashy violet, covered with a horny blackish olive epidermis; columella four-plaited, plaits large; interior of the aperture tinged with purple ash-colour.

Voluta lens, Wood, Ind. Test. Supp., pl. 3. f. 28.
Tiara foraminata, Swainson.
Mitra Dupontiæ, Kiener.

Hab. Panama, St. Elena and isle of Plata (dredged from sandy mud and gravel at a depth ranging from six to fourteen fathoms); Cuming.

This species being so imperfectly figured in Wood's Index Supp., may account for its having been described under different names at three somewhat distant periods. The double row of holes with which each whorl is perforated round the middle forms nevertheless a very characteristic feature.

Species 2. (Mus. Norris.)

MITRA VERSICOLOR. *Mitr. testâ fusiformi-oblongâ, subventricosâ, spirâ acuminatâ; anfractibus transversim subtilissimè punctato-striatis; lutescente aut fuscescente-albâ, castaneo-fusco sparsim variegatâ, maculis albis plurimis minutis fusco-marginatis ornatâ; columellâ quadriplicatâ.*

THE VARIEGATED MITRE. Shell fusiformly oblong, rather ventricose, spire acuminated; whorls transversely very finely striated with punctures; yellowish or brownish white, sparingly variegated with chestnut-brown and ornamented with numerous small white spots edged with brown; columella four-plaited.

MARTYN, Universal Conch., f. 23.

Voluta nubila, Gmelin, Chemnitz.

Variety? *Mitra sanguinolenta*, Lamarck.

Hab. Zanzibar, east coast of Africa (found on the reefs at low water); Thorn.

Lamarck's *Mitra sanguinolenta* appears to be a variety of this species, and not the shell figured for it by Kiener, which looks like a worn *M. texturata.*

Species 3. (Mus. Norris.)

MITRA NEBULOSA. *Mitr. testâ fusiformi, spirâ acuminatâ, transversim punctato-striatâ, punctis subprofundis, longitudinaliter subtilissimè striatis; albâ, maculis lutescentibus et luteo-fuscis nebulosâ; columellâ quinqueplicatâ.*

THE CLOUDED MITRE. Shell fusiform, spire acuminated, transversely striated with punctures, punctures rather deep, longitudinally very finely striated; white, clouded with yellow and yellowish brown spots; columella five-plaited.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Madagascar. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

Quite distinct from the *Mitra versicolor*, for the illustration of which species it is figured by M. Kiener.

Species 4. (Mus. Cuming.)

MITRA SWAINSONII. *Mitr. testâ elongato-fusiformi, turritâ, spirâ productâ, suturis subprofundis; lævigatâ, basim versus striatâ; albâ, carneo-fuscescente pallidissimè tinctâ, apicem versus præcipuè, epidermide corneâ olivaceo-fusco indutâ; columellâ quadriplicatâ.*

SWAINSON'S MITRE. Shell elongately fusiform, turreted, spire produced, sutures rather deep; smooth, striated towards the base; white, stained with a tinge of light fleshy brown, especially towards the apex, covered with a horny olive-brown epidermis; columella four-plaited.

BRODERIP, Pro. Zool. Soc., 1835.

Hab. Monte Christi, West Columbia (dredged from sandy mud at the depth of seven fathoms); Cuming.

The accompanying figure of this fine species represents the shell before it was unfortunately deprived of its epidermis.

Species 5. (Mus. Norris.)

MITRA EPISCOPALIS. *Mitr. testâ elongato-ovatâ, crassâ, solidâ, spirâ acuminatâ; anfractibus prioribus confertim punctato-striatis, cæteris lævibus; albâ, maculis grandibus subquadratis vividè rubris seriatim pictâ, superioribus maximis, irregularibus; columellâ quadriplicatâ; labro basim versus denticulato.*

THE EPISCOPAL MITRE. Shell elongately ovate, thick, solid, spire acuminated; first few whorls striated with punctures, the rest smooth; white, painted with rows of large, somewhat square bright red spots, the upper of which are very large and irregular; columella four-plaited; lip denticulated towards the base.

D'ARGENVILLE, Conch., pl. 9. f. *c.*

LAMARCK, Anim. sans vert., vol. vii. p. 299.

Hab. Ceylon. Taheite and the Philippine Islands (found under coral on the reefs at low water); Cuming.

This species is most abundantly distributed throughout the tropical regions.

Species 6. (Mus. Norris.)

MITRA NORRISII. *Mitr. testâ elongato-ovatâ, crassâ, solidâ, spirâ subobtuso-acuminatâ; striis transversis et longitudinalibus, elevatis, confertis, undique subtilissimè reticulatâ aut clathratâ, transversis prominentioribus; eburneâ, epidermide corneâ, tenui, nigerrimâ; columellâ sexplicatâ.*

NORRIS'S MITRE. Shell elongately ovate, thick, solid, spire rather obtusely acuminated, entire surface very finely reticulated or latticed with close-set, transverse and longitudinal raised striæ, transverse striæ the more prominent; ivory-white, epidermis very black, thin and horny; columella six-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

I have much pleasure in dedicating this fine species, so entirely distinct from any hitherto described, to Thomas Norris, Esq., a worthy and esteemed patron of the natural sciences, whose magnificent collection of Mitres has so greatly contributed to the completeness of this monograph. It is impossible to convey an adequate idea of the finely reticulated sculpture of this unique shell by a lithographed figure, it being so fine that the interstices of the net-work resemble minute punctures.

7

8a

8b

9

10

12

11

MITRA.

PLATE II.

Species 7. (Mus. Cuming.)

MITRA CRASSA. *Mitr. testâ oblongo-ovatâ, crassâ, solidâ, spirâ breviusculâ; anfractibus aurantio-brunneis, liris angustis confertis cingulatis, supernè lævibus, balteo albido-luteo ornatis; columellâ quinqueplicatâ, labro crenato.*

THE THICK MITRE. Shell oblong-ovate, thick, solid, spire rather short; whorls orange-brown, closely encircled with narrow ridges, upper part smooth, ornamented with a whitish yellow belt; columella five-plaited, lip crenated.

SWAINSON, Zool. Illus., First Series.

Hab. ——?

This species approximates very closely to the *Mitra aurantiaca*; it is however a stouter shell and one of much more gigantic proportions, whilst the colour is more of a dark brown.

Species 8. (Fig. *a* and *b*, Mus. Cuming.)

MITRA AMBIGUA. *Mitr. testâ ovato-fusiformi, crassâ, solidâ, basi paululùm coarctatâ, spirâ subacuminatâ; anfractibus complanatis, basim versus liratis, sulcis exilibus angustis puncturatis cingulatis, aurantio-fuscescentibus, fasciâ pallidâ subindistinctâ prope suturam ornatis; columellâ sex-plicatâ, labro peculiariter plano-coarctato, rugoso-crenato.*

THE AMBIGUOUS MITRE. Shell ovately fusiform, thick, solid, a little contracted at the base, spire somewhat acute; whorls smooth, ridged towards the base, encircled with faint narrow punctured grooves, light orange-brown, ornamented with a rather indistinct pale band near the suture; columella six-plaited; lip peculiarly flatly contracted, rugosely crenated.

SWAINSON, Zool. Illus., Second Series.

Hab. Island of Ticao, Philippines (found among coral under stones at low water mark); Cuming.

The *Mitra ambigua* is illustrated in a truly ambiguous manner by M. Kiener, who disposes of two other excellent species of Mr. Swainson's, the *Mitræ fulva* and *punctata*, by quoting them as varieties of it. This confusion should have been avoided, when it is remembered that all three species are so accurately portrayed in the 'Zoological Illustrations.'

Species 9. (Mus. Norris.)

MITRA PAPALIS. *Mitr. testâ elongatâ, crassissimâ, ponderosâ, spirâ turritâ, apice subobtuso; anfractibus lævibus, striis impresso-punctatis, remotiusculis, cinctis, margine superiore plicis dentiformibus coronato, anfractûs ultimi striis plus minusve obsoletis; albâ, rubro maculatâ; columellâ sex-plicatâ; aperturæ fauce lutescente; labro denticulato-crenato.*

THE PAPAL MITRE. Shell elongated, very thick, ponderous, spire turreted, apex rather obtuse; whorls smooth, encircled with rather remote impressly punctured striæ, upper edge coronated with tooth-shaped folds, striæ of the last whorl more or less obsolete; white, spotted and blotched with deep crimson-red; columella six-plaited; interior of the aperture yellowish; lip denticulately crenated.

LAMARCK, Anim. sans vert., vol. vii. p. 299.

Voluta papalis, Linnæus.

Hab. Island of Annaa, Pacific Ocean (found on the coral reefs at low water); Cuming.

The spots in this well-known species are very numerous, often flowing one into the other, and are distinguished by their deep crimson colour.

Species 10. (Mus. Cuming.)

MITRA TESSELLATA. *Mitr. testâ prælongo-turritâ, anfractibus tumidiusculis, transversim profundè sulcatis, liris crebris inæqualibus sulcos corrugato-decussantibus, longitudinaliter cælatis; lutescente, flammulis castaneis longitudinalibus ornatâ; columellâ sex-plicatâ; labro crenato.*

THE CHEQUERED MITRE. Shell very elongately turreted, whorls a little swollen, transversely deeply grooved, longitudinally carved with unequal close-set ridges crossing the grooves; pale yellow, ornamented with longitudinal chestnut-brown flames; columella six-plaited; lip crenated.

MARTYN, Universal Conchology, f. 19.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

In this shell a very characteristic style of sculpture is produced by the close tremulous crossing of the longitudinal ribs, which are very irregular, both in their width and comparative distance.

It should perhaps be noticed, that the specimen of *Mitra tessellata* here represented is of unusually dark colour, on account of its epidermis not having been removed.

Species 11. (Mus. Norris.)

MITRA TEREBRALIS. *Mitr. testâ prælongo-turritâ, anfractibus lævibus, sulcis exilibus angustis, irregulariter foraminatis, cinctis; aurantio-lutescente, flammulis castaneis plus minusve vividè pictâ; columellâ quinque-plicatâ; labro vix crenulato.*

THE AUGER-LIKE MITRE. Shell very elongately turreted, whorls smooth, encircled with faint narrow grooves irregularly pricked with holes; orange-yellow, more or less vividly painted with chestnut-brown flames; columella five-plaited; lip but slightly crenulated.

LAMARCK, Anim. sans vert., vol. vii. p. 303.

Hab. Zanzebar, east coast of Africa; Thorn.

This and the preceding species appear to have been hitherto confounded together, although presenting not only a very different style of sculpture, but a variation of form of no mean specific importance. They are moreover from two localities, which rarely, or never, produce examples of the same species.

The *Tiara terebralis* of Swainson, Pro. Zool. Soc., 1835, is the *Mitra subulata* of Lamarck (see Plate XI.), a shell differing so essentially from the *Mitra terebralis*, that I scarcely know how to account for Mr. Swainson's extraordinary remark, that the first-mentioned shell so closely resembles the last, "that but for its possessing the generic characters of *Tiara* it might pass for the same species."

Species 12. (Mus. Cuming.)

MITRA CHRYSOSTOMA. *Mitr. testâ elongato-ovatâ, basi attenuatâ, recurvâ, spirâ acuminatâ; anfractibus transversim obtusè liratis, longitudinaliter subobliquè sulcatis, anfractûs ultimi sulcis lirisque medianis obsoletis; albidâ aut flavescente, maculis castaneis grandibus subquadratis indistinctè tessellatâ; columellâ quinque-plicatâ; aperturâ subcontractâ, fauce pallidè rubro-aureâ; labro exilissimè crenulato.*

THE GOLDEN-MOUTH MITRE. Shell elongately ovate, base attenuated, recurved, spire acuminated; whorls transversely obtusely ribbed, longitudinally rather obliquely grooved, grooves and middle ridges of the last whorl obsolete; whitish or yellowish, indistinctly tessellated with large, somewhat square, chestnut spots or blotches; columella five-plaited; aperture somewhat contracted, interior tinged with a warm reddish-golden colour; lip very faintly crenulated.

SWAINSON, Pro. Zool. Soc., 1836.

Hab. Island of Annaa, Pacific Ocean, and island of Ticao, Philippines (found on the reefs at low water); Cuming.

M. Kiener has given a very good representation of the *Mitra chrysostoma* for the *Mitra contracta*, which, to account for their non-accordance, he says must have been described and figured by Mr. Swainson from a worn specimen. I can assure M. Kiener, however, that the *Mitra contracta*, (properly *Mitra abbatis*) for which see Plate XIII., is quite another thing, and is represented in the 'Zoological Illustrations' with particular accuracy.

13

14

15

16

17

18

19

20

21

ROYAL ASIATIC SOCIETY LIBRARY OF THE BOMBAY BRANCH

MITRA.

PLATE III.

Species 13. (Mus. Norris.)

MITRA STAINFORTHII. *Mitr. testâ subcylindraceo-fusiformi, anfractibus transversim striatis, longitudinaliter costatis, costis latiusculis, convexis, subdistantibus; albidâ, apice basique cinereo-cærulescentibus, costis maculis quadratis rubris vividè pictis; columellâ quadriplicatâ.*

STAINFORTH'S MITRE. Shell somewhat cylindrically fusiform, whorls transversely striated, longitudinally ribbed, ribs rather broad, convex, somewhat distant; whitish, base and apex ashy blue, ribs painted with square bright red spots; columella four-plaited.

REEVE, Pro. Zool. Soc., 1841.

Hab. Island of Burias, Philippines (found in coral sand at the depth of seven fathoms); Cuming.

This magnificent species, which I had the pleasure of describing about three years since, constituted the chief ornament of an important collection of Mitres accumulated after many years' labour and expensive zeal by the Rev. Mr. Stainforth. This collection has however been recently augmented to a most valuable extent by the liberality of Thomas Norris, Esq., who having purchased it in addition to his own, is now in possession of about a thousand specimens of Mitres, among which, as this monograph of the genus will testify, are many of the utmost rarity and beauty.

A few small but richly coloured specimens of the *Mitra Stainforthii* were collected by Mr. Cuming at the above-mentioned locality.

Species 14. (Mus. Cuming.)

MITRA DENNISONI. *Mitr. testâ fusiformi, spirâ attenuato-acuminatâ, anfractibus subconcentricè costatis, transversim sulcatis, sulcis angustis, costas superplus minusve obsoletis.; rubido-aurantiâ, zonâ unicâ albidâ cingulatâ, cærulescente-olivaceo inter costas peculiariter tinctâ; columellâ quadriplicatâ.*

DENNISON'S MITRE. Shell fusiform, spire attenuately acuminated, whorls somewhat concentrically ribbed, transversely grooved, grooves narrow, more or less obsolete upon the ribs; reddish orange, encircled with a single white zone, peculiarly stained with blueish olive between the ribs; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Puteao, province of Albay, island of Luzon, Philippines (found on mud-banks at low water); Cuming.

I dedicate this fine species with much pleasure, at the particular request of Mr. Cuming, to J. Dennison, Esq., a gentleman who has acquired considerable fame in the conchological world on account of the very choice and select character of his collection of shells.

Species 15. (Mus. Norris.)

MITRA STIGMATARIA. *Mitr. testâ fusiformi, spirâ acuto-acuminatâ; anfractibus transversim impresso-striatis, longitudinaliter subconcentricè costatis, costis numerosis, subangustis; lutescente-albâ, cærulescente-albâ, aut cinereo-lutescente, costis plerumque pallidioribus, maculis rufis parvis uniseriatim vividè pictis, maculis interdum, sed raro, nullis; columellâ basique nigricante-fuscis, columellâ quadriplicatâ.*

THE BRANDED MITRE. Shell fusiform, spire sharply acuminated; whorls transversely impressly striated, longitudinally ribbed, ribs numerous, rather narrow; yellowish white, blueish white, or ashy blue, ribs generally paler, painted with a single row of bright red spots, spots sometimes, but rarely, wanting; base and columella blackish brown, columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 311.

Unspotted variety, *Voluta granosa*, Chemnitz.

Hab. Mauritius, &c. Philippine Islands (found at Ticao, Capul, and Masbate, on the reefs at low water, and at Siquijor in sandy mud at the depth of eleven fathoms); Cuming.

A delicately marked species, varying in colour from pale yellowish white to dark ashy blue, generally encircled with two rows of small bright red spots, the lower row of which is only visible on the last whorl.

Species 16. (Mus. Cuming.)

MITRA FLOCCATA. *Mitr. testâ elongato-ovatâ, crassiusculâ, lævigatâ, punctorum seriebus undique cinctâ; lutescente-spadiceâ, albo longitudinaliter floccatâ; columellâ quadriplicatâ, labro prope basim crenato.*

THE FLAKED MITRE. Shell elongately ovate, rather thick, smooth, encircled throughout with rows of punctures; yellowish bay-colour, longitudinally flaked with white; columella four-plaited; lip crenated near the base.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The specimen here figured, from the collection of Mr. Cuming, is the only one of the species I am acquainted with.

Species 17. (Mus. Norris.)

MITRA ZONATA. *Mitr. testâ ovato-fusiformi, lævigatâ, spirâ subturritâ; anfractibus infernè nigerrimis, supernè albidis, epidermide luteâ, fulvo-marmoratâ indutis; columellâ quinqueplicatâ.*

THE ZONED MITRE. Shell ovately fusiform, smooth, spire somewhat turreted; whorls very black round the lower part, white round the upper, covered with a yellow fulvous marbled epidermis; columella five-plaited.

MARRYATT, Trans. Linn. Soc., 1817, vol. xiii. p. 338. pl. 10. f. 1 and 2.
Mitra Santangeli, Maravigna.

Hab. Mediterranean (taken up near the port of Nice, adhering to a sounding lead in very deep water); Marryatt.

This remarkable species, an inhabitant of the Mediterranean, though discovered nearly thirty years since, and successively described and figured by Swainson, Risso and Kiener, is very rarely found. The example here represented, from the collection of Thomas Norris, Esq., is, I believe, the only one in this country. A worn uncoated specimen has been described and figured by M. Maravigna in the 'Magasin de Zoologie' under the name of *Mitra Santangeli*.

Species 18. (Mus. Norris.)

MITRA SOLIDA. *Mitr. testâ ovato-elongatâ, crassâ, solidâ, spirâ subturritâ; anfractibus numerosis, convexis, lævigatis, transversim sulcatis, sulcis angustis, striis subtilissimis prope suturas decussatis; spadiceo-fulvâ, albo sparsim et irregulariter floccatâ; columellâ quinqueplicatâ.*

THE SOLID MITRE. Shell ovately elongated, thick, solid, spire somewhat turreted; whorls numerous, convex, smooth, transversely grooved, grooves narrow, crossed near the sutures with very fine longitudinal striæ; fulvous bay-colour, irregularly flaked here and there with white; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This interesting species may be recognised by its many convex, deep-sutured whorls; and the whorls being longitudinally striated near the sutures, exhibit a slight cancellated appearance.

Species 19. (Mus. Norris.)

MITRA PUNCTICULATA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, suturis profundis; anfractibus supernè mucronato-coronatis, transversim sulcatis, sulcis impressis, puncticulatis; rufescente-aurantiâ, flammis fuscis longitudinalibus sparsim pictâ; anfractu ultimo zonâ latiusculâ lutescente albifloccatâ cingulato; columellâ quadriplicatâ.*

THE PUNCTURED MITRE. Shell oblong-ovate, spire rather short, sutures deep; whorls sharp-pointedly coronated at the upper part, transversely grooved, grooves impressed, punctured; reddish orange, painted here and there with brown flames; last whorl encircled with a rather broad white-flaked pale yellow zone; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 300.
Mitra diadema, Swainson.

Hab. Philippine Islands (found under coral on the reefs at low water); Cuming.

This well-known species was found abundantly by Mr. Cuming at the above-mentioned locality.

Species 20. (Mus. Norris.)

MITRA CAFFRA. *Mitr. testâ fusiformi, spirâ transversim striatâ, longitudinaliter plicatâ, anfractu ultimo lævi, basim versus elevato-striato; rufescente-fuscâ, zonâ luteâ angustâ unicâ cingulatâ, anfractu ultimo zonis duabus; columellâ quadriplicatâ.*

THE NEGRO MITRE. Shell fusiform, spire transversely striated, longitudinally plaited, last whorl smooth, elevately striated towards the base; very dark reddish brown, encircled with a single narrow yellow zone, last whorl with two zones; columella four-plaited.

LAMARCK, Anim. sans vert., vol. xii. p. 310.
Voluta caffra, Linnæus.
Mitra bifasciata, Swainson.

Hab. Island of Ticao, Philippines (found under stones and on mud-banks at low water, and in sandy mud at the depth of six fathoms); Cuming.

The sculpture of this species is somewhat variable, inasmuch as the upper whorls are much more strongly plicately ribbed in some specimens than in others.

Species 21. (Mus. Norris.)

MITRA DIGITALIS. *Mitr. testâ oblongo-ovatâ, in medio subattenuatâ, spirâ breviusculâ; anfractibus tuberculis parvis obtusis coronatis, transversim sulcatis, sulcis angustis, impresso-punctatis, subdistantibus; luteâ, lutescente-fusco variâ, maculis grandibus albis irregularibus seriatim cinctâ; columellâ sexplicatâ.*

THE THIMBLE MITRE. Shell oblong-ovate, somewhat attenuated towards the middle, spire rather short; whorls coronated with small blunt tubercles, transversely grooved, grooves narrow, impressly punctured, rather distant; yellow, variegated with yellowish brown, encircled with large irregular white spots; columella six-plaited.
Voluta digitalis, Chemnitz, Conch., vol. x. p. 169.
Voluta pertusa? Linnæus.
Mitra millepora, Lamarck.

Hab. Island of Ticao, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

A well-known species, of a very peculiar style of colouring. *La Thiare à Cul de Dé* of Favanne.

23

22

24

25

26

28

27

MITRA.

PLATE IV.

Species 22. (Mus. Cuming.)

MITRA LAMARCKII. *Mitr. testâ elongato-turritâ, lævigatâ, transversim punctato-striatâ; albâ, maculis grandibus subquadratis castaneo-spadiceis seriatim cinctâ; columellâ quinqueplicatâ.*

LAMARCK'S MITRE. Shell elongately turreted, smooth, transversely striated with punctures; white, encircled with rows of large somewhat square chestnut-bay spots; columella five-plaited.

DESHAYES, Encyclopédie Méthodique, vers, vol. ii.?
Mitra pertusa (cardinalis), var., Swainson.

Hab. ——?

There is a peculiarity in the colour and marking of this species by which it may be always distinguished from the *Mitra cardinalis*, with which it is closely allied in other respects.

Species 23. (Mus. Norris.)

MITRA PONTIFICALIS. *Mitr. testâ oblongo-turritâ, crassâ, solidâ; anfractibus fortiter coronatis, prioribus subtilissimè foraminatis, anfractu ultimo prope basim foraminato; albâ, maculis aurantio-rubris grandibus irregularibus seriatim cinctâ; columellâ quadriplicatâ.*

THE PONTIFICAL MITRE. Shell oblong-turreted, thick, solid; whorls strongly coronated, the first few punctured with very fine holes, last whorl punctured with holes around the base; white, encircled with rows of large irregular orange-red spots; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 300.
Thiara pontificalis, Lister.
Mitra papalis minor, Klein, Martini.

Hab. Islands of Annaa and Taheite, Pacific Ocean (found on the reefs at low water); Cuming.

There are sometimes, but very rarely, two rows of holes round the middle of the whorls throughout.

Species 24. (Mus. Cuming.)

MITRA FULVA. *Mitr. testâ subcylindraceo-ovatâ, supernè attenuatâ, anfractu ultimo plus minusve contracto; anfractibus supernè crenulatis, transversim impresso-striatis, striis confertis, puncturatis; fuscescente-fulvâ, punctis albis perpaucis minutis sparsis irregulariter notatâ; columellâ quinque- vel sex-plicatâ; labro intus crebricrenato; aperturæ fauce fuscescente-fulvo tinctâ.*

THE FULVOUS MITRE. Shell somewhat cylindrically ovate, attenuated towards the upper part, last whorl more or less contracted; whorls crenulated round the top, transversely impressly striated, striæ close-set, punctured; fulvous brown, irregularly marked with minute scattered white dots; columella five- or six-plaited; lip closely crenated within; interior of the aperture fulvous-brown.

SWAINSON, Zoological Illustrations, Second Series, (Broderip,) Pro. Zool. Soc., 1836.
Mitra ambigua, var., Kiener.

Hab. Islands of Annaa and Taheite, Pacific Ocean (found on the reefs in shallow water); Cuming.

For another figure of this species, in which the scattered white specks are somewhat obscurely represented, see Plate VI. fig. 24 *b*. It is quite distinct from the *Mitra ambigua*.

Species 25. (Mus. Cuming.)

MITRA ADUSTA. *Mitr. testâ oblongâ, anfractibus ventricosiusculis, supernè crenulatis, transversim impresso-lineatis, lineis subdistantibus, striis elevatiusculis obliquè undatis longitudinaliter decussatis; albidâ, flammulis ferrugineo-fuscis longitudinalibus ornatâ, lineis impressis ferrugineo-fuscis; columellâ quinqueplicatâ; labro subindistinctè crenato.*

THE BURNT MITRE. Shell ovately oblong, whorls rather ventricose, crenulated round the top, impressly lineated transversely, lines rather distant, decussated longitudinally with obliquely waved rather elevated striæ; whitish, ornamented with longitudinal rusty brown flames, impressed lines rusty brown; columella five-plaited; lip rather indistinctly crenated.

LAMARCK, Anim. sans vert. vol. vii. p. 303.
Voluta ruffina? Linnæus.
Thiara adusta, Martini.

Hab. Island of Annaa, Pacific Ocean, and island of Guimaras, Philippines (found under coral on the reefs at low water); Cuming.

The peculiarity of this species, independent of the

Species 17. (Mus. Norris.)

MITRA ZONATA. *Mitr. testâ ovato-fusiformi, lævigatâ, spirâ subturritâ; anfractibus infernè nigerrimis, supernè albidis, epidermide lutea, fulvo-marmoratâ indutis; columellâ quinqueplicatâ.*

THE ZONED MITRE. Shell ovately fusiform, smooth, spire somewhat turreted; whorls very black round the lower part, white round the upper, covered with a yellow fulvous marbled epidermis; columella five-plaited.

MARRYATT, Trans. Linn. Soc., 1817, vol. xiii. p. 338. pl. 10. f. 1 and 2.
Mitra Santangeli, Maravigna.

Hab. Mediterranean (taken up near the port of Nice, adhering to a sounding lead in very deep water); Marryatt.

This remarkable species, an inhabitant of the Mediterranean, though discovered nearly thirty years since, and successively described and figured by Swainson, Risso and Kiener, is very rarely found. The example here represented, from the collection of Thomas Norris, Esq., is, I believe, the only one in this country. A worn uncoated specimen has been described and figured by M. Maravigna in the 'Magasin de Zoologie' under the name of *Mitra Santangeli*.

Species 18. (Mus. Norris.)

MITRA SOLIDA. *Mitr. testâ ovato-elongatâ, crassâ, solidâ, spirâ subturritâ; anfractibus numerosis, convexis, lævigatis, transversim sulcatis, sulcis angustis, striis subtilissimis prope suturas decussatis; spadiceo-fulvâ, albo sparsim et irregulariter floccatâ; columellâ quinqueplicatâ.*

THE SOLID MITRE. Shell ovately elongated, thick, solid, spire somewhat turreted; whorls numerous, convex, smooth, transversely grooved, grooves narrow, crossed near the sutures with very fine longitudinal striæ; fulvous bay-colour, irregularly flaked here and there with white; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This interesting species may be recognised by its many convex, deep-sutured whorls; and the whorls being longitudinally striated near the sutures, exhibit a slight cancellated appearance.

Species 19. (Mus. Norris.)

MITRA PUNCTICULATA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, suturis profundis; anfractibus supernè mucronato-coronatis, transversim sulcatis, sulcis impressis, puncticulatis; rufescente-aurantiâ, flammis fuscis longitudinalibus sparsim pictâ; anfractu ultimo zonâ latiusculâ lutescente albifloccatâ cingulato; columellâ quadriplicatâ.*

THE PUNCTURED MITRE. Shell oblong-ovate, spire rather short, sutures deep; whorls sharp-pointedly coronated at the upper part, transversely grooved, grooves impressed, punctured; reddish orange, painted here and there with brown flames; last whorl encircled with a rather broad white-flaked pale yellow zone; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 300.
Mitra diadema, Swainson.

Hab. Philippine Islands (found under coral on the reefs at low water); Cuming.

This well-known species was found abundantly by Mr. Cuming at the above-mentioned locality.

Species 20. (Mus. Norris.)

MITRA CAFFRA. *Mitr. testâ fusiformi, spirâ transversim striatâ, longitudinaliter plicatâ, anfractu ultimo lævi, basim versus elevato-striato; rufescente-fuscâ, zonâ luteâ angustâ unicâ cingulatâ, anfractu ultimo zonis duabus; columellâ quadriplicatâ.*

THE NEGRO MITRE. Shell fusiform, spire transversely striated, longitudinally plaited, last whorl smooth, elevately striated towards the base; very dark reddish brown, encircled with a single narrow yellow zone, last whorl with two zones; columella four-plaited.

LAMARCK, Anim. sans vert., vol. xii. p. 310.
Voluta caffra, Linnæus.
Mitra bifasciata, Swainson.

Hab. Island of Ticao, Philippines (found under stones and on mud-banks at low water, and in sandy mud at the depth of six fathoms); Cuming.

The sculpture of this species is somewhat variable, inasmuch as the upper whorls are much more strongly plicately ribbed in some specimens than in others.

Species 21. (Mus. Norris.)

MITRA DIGITALIS. *Mitr. testâ oblongo-ovatâ, in medio subattenuatâ, spirâ breviusculâ; anfractibus tuberculis parvis obtusis coronatis, transversim sulcatis, sulcis angustis, impresso-punctatis, subdistantibus; luteâ, lutescente-fusco variâ, maculis grandibus albis irregularibus seriatim cinctâ; columellâ sexplicatâ.*

THE THIMBLE MITRE. Shell oblong-ovate, somewhat attenuated towards the middle, spire rather short; whorls coronated with small blunt tubercles, transversely grooved, grooves narrow, impressly punctured, rather distant; yellow, variegated with yellowish brown, encircled with large irregular white spots; columella six-plaited.
Voluta digitalis, Chemnitz, Conch., vol. x. p. 169.
Voluta pertusa ? Linnæus.
Mitra millepora, Lamarck.

Hab. Island of Ticao, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

A well-known species, of a very peculiar style of colouring. *La Thiare à Cul de Dé* of Favanne.

22

23

24

25

26

28

27

MITRA.

PLATE IV.

Species 22. (Mus. Cuming.)

MITRA LAMARCKII. *Mitr. testâ elongato-turritâ, lævigatâ, transversim punctato-striatâ; albâ, maculis grandibus subquadratis castaneo-spadiceis seriatim cinctâ; columellâ quinqueplicatâ.*

LAMARCK'S MITRE. Shell elongately turreted, smooth, transversely striated with punctures; white, encircled with rows of large somewhat square chestnut-bay spots; columella five-plaited.

DESHAYES, Encyclopédie Méthodique, vers, vol. ii.
Mitra pertusa (cardinalis), var., Swainson.

Hab. ——?

There is a peculiarity in the colour and marking of this species by which it may be always distinguished from the *Mitra cardinalis*, with which it is closely allied in other respects.

Species 23. (Mus. Norris.)

MITRA PONTIFICALIS. *Mitr. testâ oblongo-turritâ, crassâ, solidâ; anfractibus fortiter coronatis, prioribus subtilissimè foraminatis, anfractu ultimo prope basim foraminato; albâ, maculis aurantio-rubris grandibus irregularibus seriatim cinctâ; columellâ quadriplicatâ.*

THE PONTIFICAL MITRE. Shell oblong-turreted, thick, solid; whorls strongly coronated, the first few punctured with very fine holes, last whorl punctured with holes around the base; white, encircled with rows of large irregular orange-red spots; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 300.
Thiara pontificalis, Lister.
Mitra papalis minor, Klein, Martini.

Hab. Islands of Annaa and Taheite, Pacific Ocean (found on the reefs at low water); Cuming.

There are sometimes, but very rarely, two rows of holes round the middle of the whorls throughout.

Species 24. (Mus. Cuming.)

MITRA FULVA. *Mitr. testâ subcylindraceo-ovatâ, supernè attenuatâ, anfractu ultimo plus minusve contracto; anfractibus supernè crenulatis, transversim impresso-striatis, striis confertis, puncturatis; fuscescente-fulvâ, punctis albis perpaucis minutis sparsis irregulariter notatâ; columellâ quinque- vel sex-plicatâ; labro intus crebricrenato; aperturæ fauce fuscescente-fulvo tinctâ.*

THE FULVOUS MITRE. Shell somewhat cylindrically ovate, attenuated towards the upper part, last whorl more or less contracted; whorls crenulated round the top, transversely impressly striated, striæ close-set, punctured; fulvous brown, irregularly marked with minute scattered white dots; columella five- or six-plaited; lip closely crenated within; interior of the aperture fulvous-brown.

SWAINSON, Zoological Illustrations, Second Series, (Broderip,) Pro. Zool. Soc., 1836.
Mitra ambigua, var., Kiener.

Hab. Islands of Annaa and Taheite, Pacific Ocean (found on the reefs in shallow water); Cuming.

For another figure of this species, in which the scattered white specks are somewhat obscurely represented, see Plate VI. fig. 24 *b*. It is quite distinct from the *Mitra ambigua*.

Species 25. (Mus. Cuming.)

MITRA ADUSTA. *Mitr. testâ oblongâ, anfractibus ventricosiusculis, supernè crenulatis, transversim impresso-lineatis, lineis subdistantibus, striis elevatiusculis obliquè undatis longitudinaliter decussatis; albidâ, flammulis ferrugineo-fuscis longitudinalibus ornatâ, lineis impressis ferrugineo-fuscis; columellâ quinqueplicatâ; labro subindistinctè crenato.*

THE BURNT MITRE. Shell ovately oblong, whorls rather ventricose, crenulated round the top, impressly lineated transversely, lines rather distant, decussated longitudinally with obliquely waved rather elevated striæ; whitish, ornamented with longitudinal rusty brown flames, impressed lines rusty brown; columella five-plaited; lip rather indistinctly crenated.

LAMARCK, Anim. sans vert. vol. vii. p. 303.
Voluta ruffina? Linnæus.
Thiara adusta, Martini.

Hab. Island of Annaa, Pacific Ocean, and island of Guimaras, Philippines (found under coral on the reefs at low water); Cuming.

The peculiarity of this species, independent of the

somewhat ventricose structure, consists in its being encircled with impressed brown lines, which are not punctured as Lamarck describes, although they obtain a certain likeness of that character from the crossing of the longitudinal striæ. According to Solander's manuscript it is the *Voluta ruffina* of Linnæus, but as this is extremely doubtful I have not ventured to adopt the name.

Species 26. (Mus. Norris.)

Mitra cardinalis. *Mitr. testâ ovatâ, spirâ breviusculâ, acuminatâ, anfractu ultimo maximo, ventricoso; transversim impresso-striatâ, striis subtilissimè puncturatis; albidâ, cærulescente interdum pallidè nebulosâ, maculis castaneo-spadiceis irregularibus seriatim cinctis; columellâ quinqueplicatâ.*

The cardinal Mitre. Shell ovate, spire rather short, acuminated, last whorl very large, ventricose; transversely impressly striated, striæ very finely punctured; white, sometimes very faintly clouded with a blueish tint, encircled with rows of chestnut-bay spots; columella five-plaited.

Gronovius, Zoophylacium, Part III. No. 1326 and 1327.
Pileus cardinalitius, Seba.
Voluta cardinalis, Gmelin.
Mitra pertusa, Swainson.

Hab. Ceylon.

The *Mitræ cardinalis*, *adusta*, and *millepora* have each been referred by authors to the *Voluta pertusa* of Linnæus; as it therefore cannot be satisfactorily identified, I think Lamarck was fully justified in adopting Gronovius's name and banishing that of *pertusa* from the nomenclature. The *Mitra cardinalis* was moreover long known to ancient writers as the 'Cardinal's Hat.'

Species 27. (Mus. Cuming.)

Mitra gigantea. *Mitr. testâ elongato-turritâ, spirâ productâ, suturis profundè impressis; anfractibus cylindraceo-extensis, costis angustis elevatis, striâ unicâ elevatâ in anfractu ultimo intercurrente, undique annulatim cinctis; lacteâ, epidermide corneâ nigerrimâ indutâ; columellâ quadriplicatâ.*

The gigantic Mitre. Shell elongately turreted, spire produced, sutures deeply impressed; whorls cylindrically extended, encircled after the manner of rings, with narrow elevated ribs, having a single raised stria running between them on the last whorl; cream-colour, covered with a very black horny epidermis; columella four-plaited.

Swainson, MSS.

Hab. Xipixapi, West Columbia (found in sandy mud at the depth of seven fathoms); Cuming.

This fine species may be recognised by the narrow elevated character of the ribs, which give it the appearance of being encircled with rings.

Species 28. (Mus. Cuming.)

Mitra ferruginea. *Mitr. testâ oblongo-ovatâ, spirâ acuminatâ, transversim undique crebricostatâ, costis rotundatis, interstitiis sulcatis; albidâ, aurantio- et ferrugineo-fusco strigatâ et maculatâ; columellâ quinqueplicatâ; aperturæ fauce aurantiâ; labro fortiter crenato.*

The rusty Mitre. Shell oblong-ovate, spire acuminated, transversely very closely ribbed throughout, ribs rounded, interstices grooved; whitish, streaked and spotted with orange and rusty brown; columella five-plaited; interior of the aperture orange; lip strongly crenated.

Lamarck, Anim. sans vert., vol. vii. p. 303.
Mitra vitulina, Dillwyn.

Hab. Islands of Annaa and Taheite, Pacific Ocean (found under coral on the reefs at low water); Cuming.

The *Mitra abbatis* of Chemnitz, for which see Plate XIII., is not a variety of the *Mitra ferruginea*, as Lamarck supposed, but a very characteristic species, neither ribbed nor grooved, figured subsequently by Swainson under the name of *Mitra contracta*; and M. Kiener in adding to this chapter of accidents has erroneously illustrated the species, with that erroneous name, by a worn specimen of the *Mitra chrysostoma*.

29

31

34

32

33

34

35

36

MITRA.

PLATE V.

Species 29. (Mus. Cuming.)

MITRA INQUINATA. *Mitr. testâ fusiformi-oblongâ, subangustâ, spirâ acuminatâ, transversim impresso-striatâ, striis puncturatis; eburneâ, rubido-fusco longitudinaliter inquinatâ; columellâ quadriplicatâ.*

THE SMEARED MITRE. Shell fusiformly oblong, rather narrow, spire acuminated, transversely impressly striated, striæ punctured; ivory-white, longitudinally smeared with reddish brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

Though a species of very simple character, it is quite distinct from any hitherto described.

Species 30. (Mus. Drummond.)

MITRA FISSURATA. *Mitr. testâ cylindraceo-fusiformi, anfractibus lævissimis, nitidis, parte superiori interdum longitudinaliter impresso-striatâ; pallidè griseâ, infrà cinereo-griseâ, saturatiore, totâ reticulâ albâ subtilissimâ pictâ; columellâ quinqueplicatâ.*

THE CRACKED MITRE. Shell cylindrically fusiform, whorls very smooth, shining, upper part sometimes longitudinally impressly striated; pale grey, darker ashy grey beneath, the whole covered with a very delicate white net-work; columella five-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 311.

Hab. Islands of Mauritius and Zanzibar, east coast of Africa; Thorn.

Lamarck likens the delicate net-work of this beautiful shell to the fine hair-like cracks in old china; the resemblance is not however a very forcible one; a more appropriate name might have been selected without much difficulty.

Species 31. (Mus. Cuming.)

MITRA GRACILIS. *Mitr. testâ elongatâ, spirâ valdè productâ, suturis subprofundis; anfractibus transversim subtilissimè costatis, costis angustis irregularibus, interstitiis liris obtusis minutissimis pulcherrimè decussatis; albidâ, fuscescente pallidè fasciatâ, costis fusco articulatis; columellâ quadriplicatâ.*

THE SLENDER MITRE. Shell elongated, spire strongly produced, sutures rather deep; whorls transversely very finely ribbed, ribs narrow, irregular, interstices beautifully decussated with minute obtuse ridges; whitish, very faintly banded with a brownish tint, ribs articulated with brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

A most delicately sculptured shell, with somewhat the character of the *Mitra granatina* about it.

Species 32. (Fig. Zool. Illus.)

MITRA STRIGATA. *Mitr. testâ ovato-oblongâ, lævi, rubido-fuscâ, strigis juxta suturas albis subdistantibus longitudinaliter ornatâ; columellâ quadriplicatâ.*

THE STREAKED MITRE. Shell ovately oblong, smooth, reddish brown, ornamented with rather distant longitudinal streaks, white next the sutures; columella four-plaited.

SWAINSON, Brande's Journ., App., 1824; and Zoological Illustrations, Second Series.

Hab. —— ?

A slight indication of the white streaked character of this species may sometimes be observed in the following.

Species 33. (Mus. Cuming.)

MITRA NIGRA. *Mitr. testâ acuto-elongatâ, Melaniæformi, lævi aut minutissimè striato-decussatâ; anfractibus plano-convexis, olivaceo-brunneis, juxta suturas indistinctè albipunctatis; columellâ quadriplicatâ.*

THE BLACK MITRE. Shell sharply elongated, Melania-shaped, smooth, or very minutely decussated with striæ; whorls flatly convex, dark olive-brown, indistinctly dotted with white next the sutures; columella four-plaited.

Voluta nigra, Chemnitz (not of Quoy), Conch., vol. x. p. 168.

Mitra Melaniana, Lamarck.

Mitra carbonaria, Swainson.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

This species, though of rare occurrence, appears to be very widely distributed throughout the globe, if we may rely upon the localities quoted by Lamarck in addition to that above noted, namely, the coasts of Guinea, India and Greenland.

Species 34. (Mus. Norris.)

MITRA ORIENTALIS. *Mitr. testâ ovatâ, spirâ brevi, apicem versus plus minusve erosâ; anfractibus ventricosis, transversim minutissimè striatis; albido-fuscescente, epidermide cornea nigerrimâ omninò indutâ; aperturâ ovatâ; columellâ quadriplicatâ, cærulescente-albâ; basi truncato-recurvâ.*

THE ORIENTAL MITRE. Shell ovate, spire short, more or less eroded towards the apex; whorls ventricose, transversely very minutely striated; whitish brown, entirely covered with a very black horny epidermis; aperture ovate; columella four-plaited, blueish white, base truncately recurved.

GRAY, Griffith's Cuvier's Animal Kingdom.

Mitra maura, Swainson.

Mitra Chilensis, Kiener.

Hab. Iquiqui, Peru (found in the fissures of rocks at low water mark buried in sand); Cuming.

A shorter and more ventricose species than the preceding, with a very characteristic jet-black epidermis.

Species 35. (Mus. Cuming.)

MITRA SCABRIUSCULA. *Mitr. testâ oblongo-ovatâ, spirâ acuminatâ; anfractibus transversim costatis, costis parvulis, angustis, crenulatis, interstitiis minutissimè plano-liratis, sulcis lineisve impressis confertis longitudinaliter decussatis; albâ, fuscescente subindistinctè bifasciatâ, costis fusco irregulariter articulatis; columellâ quadriplicatâ; aperturæ fauce albâ.*

THE ROUGH MITRE. Shell oblong-ovate, spire acuminated; whorls transversely ribbed, ribs very small, narrow, crenulated or beaded, interstices very minutely flatly ridged, decussated with close-set longitudinal grooves or impressed lines; white, encircled with two somewhat indistinct light brown bands, ribs irregularly articulated with brown; columella four-plaited; interior of the aperture white.

GRAY, MSS. British Museum.

Voluta scabriuscula, Linnæus, Syst. Nat., 12th edit., p. 1192. Chemnitz, Conch., vol. xi. p. 28. pl. 172. f. 1729 and 1730.

Mitra granatina, Lamarck.

Hab. Islands of Zebu and Ticao, Philippines (found on the reefs and under stones at low water); Cuming.

I quite agree with Mr. Gray in referring this shell to the *Voluta scabricula* of Linnæus.

Species 36. (Mus. Cuming.)

MITRA CHINENSIS. *Mitr. fusiformi, spirâ turritâ, apicem versus plerumque erosâ; anfractibus subrotundatis, obsoletè punctato-striatis, anfractu ultimo prope basim subobscurè sulcatis, basi leviter recurvo; columellâ triplicatâ.*

THE CHINESE MITRE. Shell fusiform, spire turreted, generally eroded towards the apex; whorls somewhat rounded, obsoletely striated with punctures, last whorl rather obscurely grooved towards the base, base slightly recurved; columella three-plaited.

GRAY, Zoology of Beechey's Voyage, pl. 35. f. 2.

Hab. China.

This species presents the same fluviatile character as the *Mitra nigra*; it is however a much more solid shell, and of a more turriculated fusiform shape.

Species 37. (Mus. Cuming.)

MITRA SPHÆRULATA. *Mitr. testâ elongato-ovatâ, apice pallidè rosaceo, anfractibus transversim rugoso-costatis, costis subnodulosis, sulcis lineisve impressis confertis longitudinalibus decussatis; aurantio-lutescente, costis cærulescente-albis, cæruleo-nigricante irregulariter maculatis; columellâ quadriplicatâ, aperturæ fauce aurantio-lutescente; labro crenulato.*

THE SPHERICAL MITRE. Shell elongately ovate, apex rose-tinted; whorls transversely roughly ribbed, ribs somewhat nodulous, decussated with close-set longitudinal grooves or impressed lines; orange-yellow, ribs blueish white, irregularly spotted with blue-black; columella four-plaited; interior of the aperture orange-yellow; lip crenulated.

MARTYN, Universal Conch., f. 21.

Mitra scabriuscula, Lamarck.

Hab. Islands of Ticao, Philippines, and Taheite, Pacific Ocean (found buried in sand at low water); Cuming.

The shell which Lamarck described under the name of *Mitra granatina* (Sp. 35), and not this species, is the *Voluta scabriuscula* of Linnæus. Kiener says they ought to be regarded as varieties; he has been fortunate, however, not to figure them as such, for no extended series of examples could ever bring them to an approximation.

38

39

40

41

42

43

24 b

44

45

MITRA.

PLATE VI.

Species 38. (Mus. Norris.)

MITRA CRENIFERA. *Mitr. testâ elongato-ovatâ, spirâ acuminatâ, apice pallidissimè rosaceo; anfractibus liris planulatis angustis confertim decussatis, sæpè subcostatis; lutescente, fasciis duabus fuscis, supernè peculiariter lobatis, cinctâ; columellâ quadriplicatâ; aperturæ fauce aurantiâ aut pallidè purpurascente.*

THE CRENIFEROUS MITRE. Shell elongately ovate, spire acuminated, apex rose-tinted; whorls closely decussated with narrow flattened ridges, often slightly ribbed; yellowish, encircled with two brown bands peculiarly lobed round the upper edge; columella four-plaited; interior of the aperture orange or tinged with purple.

LAMARCK, Anim. sans vert., vol. vii. p. 306.

Hab. Mauritius. Bay of Manila (found in coarse sand at the depth of ten fathoms); Cuming.

The bands in this beautiful species have a peculiar castellated appearance, which is very characteristic.

Species 39. (Mus. Cuming.)

MITRA CANCELLATA. *Mitr. testâ fusiformi, spirâ subacuminatâ, suturis crenulatis; anfractibus transversim impresso-lineatis, striis longitudinalibus elevatis lirisque perpaucis irregularibus obtusis cancellatis; lutescente, fasciis tribus rubido-aurantiis subindistinctis, lineâ unicâ intercurrente, cingulatâ, liris longitudinalibus albis; columellâ quinqueplicatâ.*

THE CANCELLATED MITRE. Shell fusiform, spire somewhat acuminated, sutures crenulated; whorls transversely impressly lineated, cancellated with raised longitudinal striæ and a few irregular obtuse ridges; yellowish, encircled with three rather indistinct reddish orange bands, with a single line of the same colour running between them, longitudinal ridges white; columella five-plaited.

SWAINSON, Zoological Illustrations, First Series.

Voluta Pyramis, Wood.

Hab. ——?

This shell is at present unique in the collection of Mr. Cuming, and a very interesting well-defined species it is. M. Kiener's assumption that it is a variety of the *Mitra buccinata* (properly *glabra*), Sp. 43, is preposterous.

Species 40. (Mus. Norris.)

MITRA CASTA. *Mitr. testâ angustâ, elongatâ, spirâ acutâ; anfractibus lævibus, supernè seriatim punctatis, eburneis, epidermidis castaneo-fuscæ fasciâ latissimâ cingulatis; columellâ quadriplicatâ.*

THE CHASTE MITRE. Shell narrow, elongated, spire sharp; whorls smooth, punctured round the upper part, ivory-white, encircled with a very broad band of chestnut-brown epidermis; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 304.

Voluta casta, Solander.

Mitra fasciata, Martyn.

Hab. Islands of Mauritius and Zanzibar, east coast of Africa.

I am surprised that both Chemnitz and Lamarck, as well as Kiener, should have described the *Mitra casta* as being a brown shell banded with white, after the very accurate account given of it by our countryman Martyn. The brown colour is in fact quite superficial, and exists only in the epidermis spirally winding round the shell, which is a pure ivory-white.

Species 41. (Mus. Norris.)

MITRA NIVEA. *Mitr. testâ fusiformi, lineis creberrimis impressis, subtilissimè puncturatis, undique cingulatis; albâ, lineis aurantio-fuscescentibus subdistantibus obsoletis cinctâ, maculis perpaucis sparsis juxta suturas ornatâ; columellâ sexplicatâ.*

THE SNOW-WHITE MITRE. Shell fusiform, encircled throughout with very finely punctured impressed striæ; white, encircled with obsolete rather distant orange-brown lines, ornamented with a very few scattered spots of the same colour next the sutures; columella six-plaited.

Tiara nivea, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

This shell does not appear to be naturally white, but rather worn; the faint orange-brown colouring above described is, I think, an indication of more important painting.

Species 42. (Mus. Cuming.)

MITRA ISABELLA. *Mitr. testâ elongato-fusiformi, spirâ subturritâ, suturis profundis, basi contractâ, subrecurvâ; anfractibus transversim creberrimè costatis, costis angustis, interstitiis cancellatis; albâ, aurantio-spadiceo indistinctè fasciatâ et strigatâ; columellâ quinqueplicatâ; aperturæ fauce albâ.*

THE FAWN-COLOURED MITRE. Shell elongately fusiform, spire somewhat turreted, sutures deep, base contracted, a little recurved; whorls transversely very closely ribbed, ribs narrow, interstices cancellated; white, indistinctly banded and streaked with light orange-bay or fawn-colour; columella five-plaited; interior of the aperture white.

Tiara isabella, Swainson, Zoological Illustrations, Second Series.

Hab. China.

This species seems to be more or less affected with a singular fatality of fracture. Of several specimens which have come under my notice, the whole are broken in some part or other, and mended by their animal inhabitant.

Species 43. (Mus. Norris.)

MITRA GLABRA. *Mitr. testâ elongato-turritâ, Terebræformi, basi truncatâ, subrecurvâ, transversim subtilissimè striatâ; aurantio-rubrâ, lineis capillaribus fuscescentibus cingulatâ, epidermide corneâ glabrâ nigricante indutâ; columellâ quadriplicatâ.*

THE SMOOTH MITRE. Shell elongately turreted, Terebra-shaped, base truncated and a little recurved, transversely very finely striated; orange-red, encircled with light brown hair-like lines, covered with a smooth horny blackish epidermis; columella four-plaited.

SWAINSON, Exotic Conchology, pl. 24.

Mitra buccinata, Quoy.

Hab. Swan River, Western Australia.

The fine brown transverse lines are sometimes indistinct, but they must nevertheless be regarded as an important specific character. Mr. Swainson described this shell ten years before it was published by M. Quoy in the Zoology of the 'Voyage de l'Astrolabe.'

Fig. 24 *b*.

MITRA FULVA. For description of this species see Plate IV.

Species 44. (Mus. Norris.)

MITRA DECLIVIS. *Mitr. testâ elongato-turritâ, basi truncatâ, spirâ acuminatâ; anfractibus supernè angulato-declivibus, lævibus, transversim exilissimè impressis; cinereo-carneâ, epidermide nigerrimâ; columellâ quadriplicatâ.*

THE BENT MITRE. Shell elongately turreted, base truncated, spire acuminated; whorls smooth, angularly bent round the upper part, transversely very faintly impressed; ashy flesh-colour, epidermis very black; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This shell appears to be quite distinct from the *Mitra glabra*; there is no appearance of transverse brown lines, the whorls are angularly bent next the suture, and the spire is more sharply acuminated.

Species 45. (Mus. Cuming.)

MITRA ATTENUATA. *Mitr. testâ ovatâ, crassâ, solidâ, utrinque attenuatâ; spirâ brevi; anfractibus transversim punctato-striatis; fuscâ, sparsim albipunctatâ; columellâ sexplicatâ; aperturæ fauce fuscescente; labro intus denticulato.*

THE ATTENUATED MITRE. Shell ovate, thick, solid, attenuated at both ends; spire short; whorls transversely striated with punctures; brown, sparingly dotted with white; columella six-plaited; interior stained with brown; lip denticulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The sculpture of this shell is similar in every respect to that of the *Mitra fulva*; it is however so peculiarly attenuated in form towards the base, although of mature growth, that I do not see how it can be referred to that species.

46

47 a

47 b

47 c

48

49

50 a

50 b

50 c

MITRA.

PLATE VII.

Species 46. (Mus. Norris.)

MITRA LYRATA. *Mitr. testâ gracili-fusiformi, spirâ peracutâ, basi attenuatâ, ascendente; anfractibus longitudinaliter costatis, costis numerosis, angustissimis, elevatis, interstitiis subobscurè transversè striatis; cinereo-cærulescente, fasciis spadiceis angustis cinctâ, costis cærulescente-albis; columellâ quadriplicatâ.*

THE LYRE-LIKE MITRE. Shell slenderly fusiform, spire very sharp, base attenuated, turned upwards; whorls longitudinally ribbed, ribs numerous, very narrow, elevated, interstices rather obscurely transversely striated; ashy blue, encircled with narrow dark bands, ribs blueish white; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 308.

Voluta subdivisa (pars), Chemnitz.

Mitra subdivisa, Lamarck, Ann. du mus.

Hab. Island of Negros, Philippines (found in sandy mud at the depth of three fathoms); Cuming.

The extreme delicacy and decision of the longitudinal ribs give them very much the appearance, as Lamarck observes, of the cords of a lyre; the base of the shell is more than usually attenuated, and it is peculiarly recurved or turned upwards.

There is very little variation in the *Mitra lyrata*; the brown and white varieties mentioned by M. Kiener are varieties of the *Mitra melongena*, for the illustration of which species he has erroneously figured a *Mitra vulpecula*.

Species 47. (Fig. *a* and *b*, Mus. Cuming; Fig. *c*, Mus. Norris.)

MITRA MELONGENA. *Mitr. testâ elongato-fusiformi, gracili, basi subrecurvâ, spirâ peracutâ; anfractibus longitudinaliter costatis, costis numerosis, obtusis, interstitiis transversè striatis, costis anfractûs ultimi sæpè indistinctis; interdum albidâ, rufo- vel cinereo-fuscescente fasciatâ, interdum rufo- vel cinereo-fuscescente albifasciatâ; columellâ quadriplicatâ.*

THE MAD-APPLE MITRE. Shell elongately fusiform, slender, base a little recurved, spire very sharp; whorls longitudinally ribbed, ribs numerous, obtuse, interstices transversely striated, ribs of the last whorl often indistinct; sometimes whitish, banded with reddish or ashy brown, sometimes reddish or ashy brown banded with white; columella four-plaited.

LAMARCK (not of Kiener), Anim. sans vert., vol. vii. p. 309.

Hab. Molucca and Philippine Islands (found on mud-banks at low water); Cuming.

The shells which M. Kiener notices as being white and reddish-brown varieties of the *Mitra lyrata*, I consider to be the true *Mitra melongena* of Lamarck.

It hardly becomes me to differ upon no other than the ordinary grounds of discrimination from a gentleman who had for some years the entire charge of Lamarck's collection, and must have been in possession of all the shells described by that great author from his own cabinet; but as such is my opinion, I venture to act upon it, leaving others to judge whether the shells here represented do not answer to Lamarck's account of his *Mitra melongena*, rather than that figured by M. Kiener, which I take to be nothing more than a common variety of the *Mitra vulpecula*.

Species 48. (Mus. Norris.)

MITRA REGINA. *Mitr. testâ elongato-fusiformi, spirâ turritâ, acutè productâ; anfractibus supernè angulatis, longitudinaliter costatis, transversim elevato-striatis; aurantio-rubro et cærulescente-albo alternatim zonatâ, zonarum marginibus nigro-tæniatis; columellâ quadriplicatâ.*

THE QUEEN MITRE. Shell elongately fusiform, spire turreted, sharply produced; whorls angulated at the upper part, longitudinally ribbed, transversely elevately striated; alternately zoned with orange-red and blueish white, edged with black; columella four-plaited.

SOWERBY, Genera of Shells.

Mitra plicaria valdè elongata, Chemnitz, Conch. Cab., vol. x. pl. 151. f. 1444 and 1445.

Hab. Moluccas.

Lamarck may have considered the *Mitra regina* to be nothing more than a variety of the *Mitra tæniata*, for he illustrates the latter species by referring to Chemnitz's excellent representation of the former, under the name mentioned above; it may however be easily distinguished by the angular structure of the ribs near the sutures.

Species 49. (Mus. Norris.).

MITRA COCCINEA. *Mitr. testâ elongato-fusiformi, spirâ acuminatâ; anfractibus longitudinaliter obtuso-costatis, interstitiis transversim elevato-striatis, anfractûs ultimi costis subevanidis; vividè coccineâ aut luo tescente, balteâ unicâ albâ cingulatâ; columellâ quadriplicatâ.*

THE SCARLET MITRE. Shell elongately fusiform, spire acuminated; whorls longitudinally obtusely ribbed, interstices transversely elevately striated, ribs of the last whorls somewhat indistinct; bright scarlet or yellowish, encircled with a single white belt; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Masbate and Luzon, Philippines (found on the reefs at low water); Cuming.

This species may be easily recognised by its peculiarity of colouring,—bright scarlet encircled by a simple white belt.

Species 50. (Fig. *a*, *b* and *c*, Mus. Norris.)

MITRA VITTATA. *Mitr. testâ fusiformi, spirâ acuminatâ; anfractibus longitudinaliter obtuso-costatis, interstitiis transversim striatis, anfractûs ultimi costis subevanidis; lutea aut vividè aurantiâ, albizonatâ, vittis plurimis nigricante-fuscis cingulatâ; columellâ quinqueplicatâ.*

THE RIBAND FILLETED MITRE. Shell fusiform, spire acuminated; whorls longitudinally obtusely ribbed, interstices transversely striated, ribs of the last whorl rather indistinct; yellow or bright orange, zoned with white and encircled with several blackish brown fillets; columella five-plaited.

SWAINSON, Zoological Illustrations, First Series.

Hab. Moluccas.

The marking of this beautiful and costly species is exceedingly variable, as shown by the three interesting examples selected for illustration from the collection of Thomas Norris, Esq.

51

52a

53

54

52b

55a

55b

56

ROYAL ASIATIC SOCIETY LIBRARY BOMBAY BRANCH

MITRA.

PLATE VIII.

Species 51. (Mus. Norris.)

MITRA TUMIDA. *Mitr. testâ abbreviato-fusiformi, spirâ brevi, apice acuto; anfractibus tumidis, supernè plano-angulatis, longitudinaliter rudè costatis, costis ad angulum noduloso-tumidis; albidâ aut virescente, anfractibus ad angulum rufo tinctis, ultimo balteo nigro latiusculo cingulato; columellâ tri- aut quadriplicatâ; aperturæ fauce nigricante-fuscâ.*

THE SWOLLEN MITRE. Shell shortly fusiform, spire short, apex sharp; whorls swollen, flatly angulated round the upper part, longitudinally rudely ribbed, ribs nodulously swollen at the angle; whitish or greenish, whorls stained with red about the angle, last whorl encircled round the middle with a rather broad black belt; columella three- or four-plaited; interior of the aperture blackish brown.

REEVE, Pro. Zool. Soc., 1844.

Hab. New Holland.

A few specimens of this peculiarly swollen shell were lately brought from New Holland in H.M.S. *Beagle*.

Species 52. (Fig. *a* and *b*, Mus. Cuming.)

MITRA TÆNIATA. *Mitr. testâ elongato-fusiformi, spirâ acuminato-productâ; anfractibus convexis, longitudinaliter costatis, costis obtusis, interstitiis transversè striatis; aurantio-rubro alboque alternatim zonatâ, zonarum marginibus nigro-tæniatis; columellâ quadriplicatâ.*

THE FILLETED MITRE. Shell elongately fusiform, spire acuminately produced; whorls convex, longitudinally ribbed, ribs obtuse, interstices transversely striated; zoned alternately with orange-red and white, edges of the zones filleted with black; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 307; Enc. Méth., pl. 373. f. 7. *a* and *b*.

Hab. Philippine Islands (found on the reefs at low water); Cuming.

This beautiful shell may be distinguished from the *Mitra regina*, to which it is so nearly allied, by the absence of that angular structure round the top of the whorls so peculiar to that species. In a young state the *Mitra tæniata*, as shown at Fig. *a*, is singularly turned upwards at the base, and might easily be mistaken for a new species were it not for the exact similarity of the painting, and the circumstance of their being found together in the same locality.

Species 53. (Mus. Cuming.)

MITRA RUPICOLA. *Mitr. testâ abbreviato-fusiformi, in medio obesiusculâ, spirâ attenuatâ; anfractibus supernè angulatis, costis latiusculis obtusis longitudinalibus et transversis decussatis, ad decussationem nodosis; carneâ, epidermide fuscâ, corneâ, crassâ, ad apicem erosâ, indutâ; columellâ triplicatâ.*

THE ROCK-INHABITING MITRE. Shell shortly fusiform, rather stout in the middle, spire attenuated; whorls angulated at the upper part, decussated with rather broad, obtuse, transverse and longitudinal ribs, noduled at the point of crossing; flesh-colour, covered with a thick brown horny epidermis, eroded about the apex; columella three-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. St. Elena, West Columbia (dredged from a rocky bottom at the depth of fourteen fathoms); Cuming.

A new and very distinct species, at present unique in the collection of Mr. Cuming.

Species 54. (Mus. Dennison.)

MITRA BALTEOLATA. *Mitr. testâ fusiformi, spirâ acuminato-turritâ; anfractibus transversim elevato-striatis, longitudinaliter costatis, costis confertis, anfractûs ultimi subevanidis; balteolis nigris duobus in medio cingulatis, supra cinereo-albidâ, lineâ unicâ fuscâ circumornatâ, infra aurantiâ, interdum cinereo-viridescente tinctâ, apice fusco; columellâ quadriplicatâ.*

THE NARROW-BELTED MITRE. Shell fusiform, spire acuminately turreted; whorls transversely elevately striated, longitudinally ribbed, ribs close, of the last whorl somewhat indistinct; encircled round the middle with two narrow black belts, ashy white above, ornamented with a single brown line, orange beneath, sometimes stained with faint ashy green, apex brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Mollucca and Philippine Islands (found at the

islands of Zebu and Burias under stones at low water); Cuming.

This species approximates in some measure to the *Mitra plicata*; the differences are however fully exhibited in the accompanying figures.

Species 55. (Fig. *a*, Mus. Cuming; Fig. *b* and *c*, Mus. Norris.)

MITRA VULPECULA. *Mitr. testâ obeso-fusiformi, spirâ acuminatâ; anfractibus transversim impresso-striatis, supernè interdum læviusculis, longitudinaliter costatis, costis rudibus, obtusis, anfractûs ultimi interdum subevanidis; albidâ aut lutescente-aurantiâ, fusco plus minusve fasciatâ, tæniis pallidè rubris interdum cingulatâ, apice basique nigricantibus; columellâ quadriplicatâ, supernè nigro tinctâ.*

THE LITTLE FOX MITRE. Shell stoutly fusiform, spire acuminated; whorls transversely impressly striated, sometimes smooth towards the upper part, longitudinally ribbed, ribs rude, obtuse, of the last whorl sometimes indistinct; whitish or yellowish orange, more or less banded with brown, sometimes encircled with pale reddish fillets, base and apex blackish; columella four-plaited, stained at the upper part with black.

LAMARCK, Anim. sans vert., vol. vii. p. 309.

Voluta vulpecula, Linnæus.

Fig. 55 *c*. *Mitra melongena*, Kiener (not of Lamarck).

Hab. Philippine Islands (found under stones and on mud-banks at low water); Cuming.

This most variable of species may be distinguished by its rude obtuse ribs; another characteristic feature is the black stain upon the body whorl where the outer lip joins with the columella.

Species 56. (Mus. Cuming.)

MITRA PLICATA. *Mitr. testâ ovato-fusiformi, spirâ acuminato-turritâ; anfractibus supernè subangulato-depressis, longitudinaliter plicato-costatis, costis remotiusculis, supernè obtuso-mucronatis; albidâ aut lutescente, balteolo nigerrimo-fusco, costas superinterrupto, infra angulum cingulatâ, anfractu ultimo zonâ nigerrimo-fuscâ latiusculâ ornato; columellâ quadriplicatâ.*

THE PLAITED MITRE. Shell ovately fusiform, spire acuminately turreted; whorls rather angularly depressed at the upper part, longitudinally plicately ribbed, ribs rather distant, bluntly pointed at the top; whitish or yellowish, encircled beneath the angle with a narrow blackish brown belt, interrupted by the interposition of the ribs, last whorl ornamented with a rather broad blackish brown zone; columella four-plaited.

Turricula plicata, Klein, Rumphius.

Voluta plicaria, Linnæus.

Mitra plicaria, Lamarck.

Mitra vulpecula var. Gray.

Hab. Islands of Ticao and Guimaras, Philippines (found under stones on the reefs at low water); Cuming.

It is not usual to allow any priority in name beyond that of Linnæus, as the great founder of the binominal form of nomenclature; I retain, however, the more ancient specific termination in this instance because it is better Latin, and ought never to have been changed.

57a

57b

58

59

60

61

62

63

MITRA.

PLATE IX.

Species 57. (Mus. Cuming.)

MITRA CORRUGATA. *Mitr. testâ ovato-fusiformi, spirâ acuto-acuminatâ; anfractibus supernè depresso-angulatis, transversim vel plano- vel angusto-liratis, liris subcorrugatis, interstitiis impressis, longitudinaliter costatis, costis interdum creberrimis, plerumque remotiusculis; albidâ aut cinereo-viridescente nigro fasciatâ, interdum nigerrimo-fusco albifasciatâ; columellâ quadriplicatâ.*

THE WRINKLED MITRE. Shell ovately fusiform, spire sharply acuminated; whorls depressly angulated at the upper part, transversely either flatly or narrowly ridged, ridges somewhat wrinkled, interstices impressed, longitudinally ribbed, ribs sometimes very close, generally rather remote; whitish or ashy green, banded with black, sometimes dark brown banded with white; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 308.

Hab. Philippine Islands, Australia, New Guinea, &c.

An exceedingly variable species, both in the painting and in the number and proximity of the ribs.

Species 58. (Mus. Cuming.)

MITRA COSTELLARIS. *Mitr. testâ fusiformi, spirâ acuminato-turritâ; anfractibus supernè plano-angulatis, transversim elevato-striatis, longitudinaliter costellatis, costellis angustis, numerosis, crebris, ad angulum obtuso-mucronatis; nigricante-fuscâ, balteo albido angusto, interdum duobus, cinctâ; columellâ quadriplicatâ.*

THE NARROW-RIBBED MITRE. Shell fusiform, spire acuminately turreted; whorls flatly angulated at the upper part, transversely elevately striated, longitudinally ribbed, ribs narrow, numerous, close-set, obtusely pointed at the angle; blackish brown, encircled with a narrow white belt, sometimes with two; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 308.

Mitra subdivisa (pars), Chemnitz.

Hab. Island of Masbate, Philippines (found on mud-banks and under stones at low water); Cuming.

The author of the 'Iconographie des Coquilles vivantes' observes, in speaking of the *Mitra costellaris*, "elle a été nommée par Swainson *Mitra crassa*." By referring to our figure of that species (Plate II. fig. 7), which is represented with even more finished accuracy by Mr. Swainson in the Zoological Illustrations, the reader will be enabled to form a tolerably just estimate of M. Kiener's iconographical acumen.

Species 59. (Mus. Cuming.)

MITRA CHALYBEIA. *Mitr. testâ elongato-ovatâ, basim versus sulcatâ; anfractibus convexis, lævigatis, juxta suturas rudè subtilissimè crenulatis; cinereo-cærulescente alboque longitudinaliter strigatâ, transversim indistinctè fasciatâ, lineis rubido-fuscis equidistantibus undique cingulatâ; columellâ rufo-aurantiâ, quadriplicatâ.*

THE STEEL MITRE. Shell elongately ovate, grooved towards the base; whorls convex, smooth, rudely very finely crenulated next the sutures; longitudinally streaked with white and ashy blue, transversely indistinctly banded, encircled throughout with equidistant reddish brown lines; columella reddish orange, four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

A new and very characteristic species, at present unique in the collection of H. Cuming, Esq.

Species 60. (Mus. Dennison.)

MITRA INTERMEDIA. *Mitr. testâ elongato-fusiformi, utrinque attenuatâ, spirâ acutâ; anfractibus supernè angulatis, transversim impresso-striatis, longitudinaliter costatis, costis ad angulum leviter tuberculatis; cinereo-fusco alboque irregulariter zonatâ; columellâ quadriplicatâ.*

THE INTERMEDIATE MITRE. Shell elongately fusiform, attenuated at both ends, spire sharp; whorls angulated at the upper part, transversely impressly striated, longitudinally ribbed, ribs slightly tuberculated on the angle; irregularly zoned with ashy brown and white; columella four-plaited.

KIENER, Iconographie Coq. viv., p. 73. pl. 22. f. 70.

Hab. Molluccas.

This is an excellent species of M. Kiener's, fully distinguished from the *Mitra corrugata* by its long attenuated extremities.

Species 61. (Mus. Cuming.)

MITRA FULGURITA. *Mitr. testâ cylindraceo-elongatâ, subangustâ, transversim impresso-striatâ, striis puncturatis; pallidè spadiceo-fulvâ, strigis angustis albis longitudinalibus ornatâ; columellâ quinqueplicatâ, subumbilicatâ.*

THE BLASTED MITRE. Shell cylindrically elongated, rather narrow, transversely impressly striated, striæ punctured; pale yellowish bay, ornamented with white narrow longitudinal streaks; columella five-plaited, slightly umbilicated.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

An interesting new species, marked with white lightning-like longitudinal streaks.

Species 62. (Mus. Cuming.)

MITRA GRANULOSA. *Mitr. testâ oblongo-ovatâ, spirâ acuminato-turritâ, suturis subprofundis; anfractibus liris granulosis confertim decussatis; columellâ quadriplicatâ, subumbilicatâ; aperturâ breviusculâ.*

THE GRANULOUS MITRE. Shell oblong-ovate, spire acuminately turreted, sutures rather deep; whorls closely decussated with granular ridges; columella four-plaited, slightly umbilicated; aperture rather short.

LAMARCK, Anim. sans vert., vol. vii. p. 304.

Hab. Island of St. Vincent, Caribbees, West Indies (found on the reefs); Guilding.

The figure in Martyn's 'Universal Conchology,' f. 19, to which Lamarck and Kiener refer for this species, is evidently one of a much larger kind, for which see Pl. II. f. 10.

Species 63. (Mus. Norris.)

MITRA CINCTELLA. *Mitr. testâ fusiformi, spirâ acuminatâ-turritâ; anfractibus supernè angulatis, transversim impresso-striatis, longitudinaliter costatis, costis ad angulum tuberculatis, anfractûs ultimi infernè evanidis; albâ, zonis lividis lineisque, aliis rubris, aliis cæruleis, cinctâ; columellâ quadriplicatâ.*

THE ENCIRCLED MITRE. Shell fusiform, spire acuminately turreted; whorls angulated at the upper part, transversely impressly striated, longitudinally ribbed, ribs tuberculated on the angle, ribs of the last whorl rather indistinct towards the base; white, encircled with livid zones, and lines, some of which are red, some blue; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 309.

Mitra vulpecula var. Gray.

Hab. Molluccas.

A well-defined and characteristic species.

Species 64. (Mus. Cuming.)

MITRA LIGNARIA. *Mitr. testâ oblongo-ovatâ, crassiusculâ, spirâ acuminato-productâ; anfractibus supernè depressis, longitudinaliter subobliquè obtuso-costatis, transversim subtiliter liratis, liris binis; rubido-aurantiâ, epidermide fuscâ indutâ; columellâ quadriplicatâ; aperturâ breviusculâ.*

THE WOODEN MITRE. Shell oblong-ovate, rather thick, spire acuminately produced; whorls depressed at the upper part, longitudinally rather obliquely obtusely ribbed, transversely finely ridged, ridges in pairs; reddish orange, covered with a brown epidermis; columella four-plaited; aperture rather short.

REEVE, Pro. Zool. Soc., 1844.

Hab. St. Elena, West Columbia (dredged from rocky ground at the depth of about fourteen fathoms); Cuming.

This shell has somewhat the character of the *Mitra rupicola* found in the same locality; the spire is however longer, the aperture consequently shorter, and the sculpture is of a different character.

65

66

67

68

69

70

71

72

MITRA.

PLATE X.

Species 65. (Mus. Cuming.)

MITRA LACUNOSA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, transversim sulcatâ, sulcis confertis, regularibus, profundè puncturatis; longitudinaliter lacunosâ, lacunis subconcentricè undatis; albicante, aurantio-fuscescente prope apicem maculatâ, anfractu ultimo fasciâ latiusculâ aurantio-fuscescente cingulato; columellâ quadriplicatâ.*

THE GUTTERED MITRE. Shell oblong-ovate, spire rather short, transversely grooved, grooves close-set, regular, deeply punctured; longitudinally guttered, gutters somewhat concentrically waved; pinkish white, spotted near the apex with orange-brown, last whorl encircled with a rather broad orange-brown band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This species is characterized, independently of its peculiar style of colouring, by numerous longitudinal waved grooves or gutters having the appearance of sea-breaks.

Species 66. (Mus. Cuming.)

MITRA PELLIS-SERPENTIS. *Mitr. testâ oblongo-ovatâ, crassâ, solidâ, spirâ subacuminatâ, liris plano-granulatis transversis et longitudinalibus subtilissimè decussatâ; intus extusque lutescente; columellâ quadriplicatâ; labro supernè contracto, intus striato-crenulato.*

THE SNAKE'S-SKIN MITRE. Shell oblong-ovate, thick, solid, spire somewhat acuminated, very finely decussated with minute transverse and longitudinal granular ridges; yellowish within and without; columella four-plaited; lip contracted at the upper part, striately crenulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Mindoro and Bohol, Philippines (found under stones at low water); Cuming.

The granular coriaceous sculpture of this shell varies considerably in different individuals.

Species 67. (Mus. Cuming.)

MITRA CUMINGII. *Mitr. testâ ovatâ, utrinque attenuatâ, spirâ acuminato-turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis numerosis, ad angulum mucronatis, liris transversis angustis cancellatis, interstitiis impressis; aurantio alboque peculiariter maculato-variegatâ, maculis aurantiis nigro-lineatis; columellâ quadriplicatâ.*

CUMING'S MITRE. Shell ovate, attenuated at both ends, spire acuminately turreted; whorls angulated at the upper part, longitudinally ribbed, ribs numerous, pointed at the angle, cancellated with narrow transverse ridges, the interstices between which are deeply impressed; peculiarly mottled with orange and white, orange spots marked across with black lines; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Matnog, province of Albay, island of Luzon (found on the reefs); Cuming.

I dedicate this species to H. Cuming, Esq., as being one of the most beautiful and characteristic of the many interesting new Mitres collected by that indefatigable naturalist during his researches amongst the Philippine Islands.

Species 68. (Mus. Cuming.)

MITRA RUBIGINOSA. *Mitr. testâ elongato-ovatâ, subfusiformi, transversim crebrisulcatâ, sulcis puncturatis; albâ, rubiginoso-tinctâ; columellâ quinqueplicatâ, plicis infimis subobscuris.*

THE IRON-MOULD MITRE. Shell elongately oval, somewhat fusiform, transversely closely grooved, grooves punctured; white, stained with iron-mould; columella five-plaited, lowest plaits rather obscure.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

The iron-mould spots on this shell exhibit rather a tessellated style of arrangement.

Species 69. (Mus. Cuming.)

MITRA GUTTATA. *Mitr. testâ ovatâ, solidiusculâ, transversim punctato-striatâ, striis subremotis; luteo-olivaceâ, maculis cærulescente-albis sparsim guttatâ; columellâ quadriplicatâ.*

THE MOTTLED MITRE. Shell ovate, rather solid, marked with rather distant transverse punctured striæ;

yellowish olive, mottled here and there with blueish white spots; columella four-plaited.

SWAINSON, MSS.

Hab. —— ?

This species is not uncommon in collections.

Species 70. (Mus. Cuming.)

MITRA INTERLIRATA. *Mitr. testâ subelongatâ, spirâ acutâ, transversim liratâ, liris numerosis, acutiusculis, lirâ minore intercurrente, interstitiis striis longitudinalibus elevatis cancellatis; albâ, maculis perpaucis distantibus aurantio-fuscescentibus tinctâ; columellâ subumbilicatâ, quinqueplicatâ, plicis infimis subobscuris; basi leviter ascendente; aperturâ longiusculâ.*

THE INTER-RIDGED MITRE. Shell rather elongated, spire sharp, transversely ridged, ridges numerous, rather sharp, with a smaller ridge running between each, interstices between the ridges cancellated with longitudinal raised striæ; white, stained with a very few distant spots of faint orange-brown; columella slightly umbilicated, five-plaited, lowest plaits somewhat obscure; base a little turned upwards; aperture rather long.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found in sandy mud at the depth of four fathoms); Cuming.

The narrow intermediate ridge forms a prominent feature in this species.

Species 71. (Mus. Cuming.)

MITRA CLATHRATA. *Mitr. testâ subelongatâ, spirâ turritâ, acuminato-productâ; anfractibus supernè depresso-angulatis, longitudinaliter costatis, liris transversis elevatis, confertis, clathratis; albâ, anfractibus fasciâ fuscescente unicâ cingulatis; columellâ subumbilicatâ, quadriplicatâ; aperturâ breviusculâ.*

THE LATTICED MITRE. Shell rather elongated, spire turreted, acuminately produced; whorls depressly angulated at the upper part, longitudinally ribbed, latticed with close-set, raised, transverse ridges; white, whorls encircled with a single light brown band; columella slightly umbilicated, four-plaited; aperture rather short.

Voluta unifasciata, Wood (not *Mitra unifascialis*, Lamarck).

Hab. —— ?

A white strongly latticed shell with a prominent brown band round the middle of each whorl.

Species 72. (Mus. Cuming.)

MITRA LUGUBRIS. *Mitr. testâ ovatâ, spirâ brevi, acutâ; rugosâ, striis impresso-punctatis cingulatâ, suturis salebrosis; anfractibus supernè albis, infra nigricante-fuscis, columellâ basique albis; columellâ quinqueplicatâ.*

THE MOURNFUL-LOOKING MITRE. Shell ovate, spire short, sharp; rough, encircled with impressed punctured striæ, sutures rugged and uneven; whorls white round the upper part, very dark brown beneath, columella and base white; columella five-plaited.

SWAINSON, Zool. Illus., First Series, pl. 66.

Hab. —— ?

This is another well-characterized species for which I have no locality.

Species 73. (Mus. Cuming.)

MITRA ZEBUENSIS. *Mitr. testâ subfusiformi, nitidâ, basim versus sulcatâ, liris planiusculis, confertis, subtilissimè cancellatâ, liris longitudinalibus fortioribus; albidâ, anfractuum parte superiori maculis grandibus perpaucis castaneo-fuscis ornatâ; columellâ quinqueplicatâ.*

THE ZEBU MITRE. Shell somewhat fusiform, shining, grooved towards the base, very finely cancellated with rather flat close-set ridges, of which the longitudinal are the stronger; white, upper part of the whorls ornamented with a few large chestnut-brown spots; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Zebu, Philippines (found on the reefs at low water); Cuming.

The brown spots being situated around the upper part of the whorls give an irregular tessellated character to the spire.

74

75

76

77

78

79

80

81 a

81 b

Sowerby del. et lith.

prel: lith: Linn: imp.

MITRA.

PLATE XI.

Species 74. (Mus. Cuming.)

MITRA OCELLATA. *Mitr. testâ cylindraceo-fusiformi, anfractibus lævissimis, nitidis, parte superiori interdum longitudinaliter punctato-striatâ; pallidè griseâ, anfractu ultimo infra cinereo-griseo, saturatiore, margine albo ocellisque rubido-fuscis tæniato, totâ reticulâ albâ subtilissimâ pictâ; columellâ quinqueplicatâ.*

THE OCELLATED MITRE. Shell cylindrically fusiform, whorls very smooth, shining, upper part sometimes longitudinally striated and punctured; pale grey, last whorl ashy grey beneath, of a deeper colour, filleted at the edge with white and small reddish brown eye-like spots, the whole painted with a very fine white net-work; columella five-plaited.

SWAINSON, Zool. Illus., Second Series.

Hab. Singapore (found in sandy mud); Cuming.

Distinguished from the *Mitra fissurata* by the narrow ocellated band around the sutures.

Species 75. (Mus. Cuming.)

MITRA INFECTA. *Mitr. testâ ovatâ, basi recurvâ, spirâ acuminatâ; anfractibus striis impressis cinctis, ultimo tumidiusculo; pallidè flavâ, maculis castaneo-fuscis pictâ; columellâ obsoletè sexplicatâ.*

THE INFECTED MITRE. Shell ovate, recurved at the base, spire acuminated; whorls encircled with impressed striæ, last whorl rather swollen; pale yellow, painted with chestnut-brown spots; columella obsoletely six-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

A solid, rather ventricose shell, with a peculiar twist at the base.

Species 76. (Mus. Cuming.)

MITRA ACUPICTA. *Mitr. testâ acuminato-turritâ, anfractibus convexis, numerosis, longitudinaliter crebriliratis, transversim impresso-striatis; albidâ, apice basique rosaceis, liris punctis cæruleis et fuscis profusè variegatis; columellâ quadriplicatâ.*

THE EMBROIDERED MITRE. Shell acuminately turreted, whorls convex, numerous, longitudinally closely ridged, transversely impressly striated; whitish, pink at the base and apex, ridges profusely variegated with blue and brown dots; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Zanzibar, east coast of Africa.

The surface of this beautiful shell has the appearance of being curiously embroidered with small coloured beads.

Species 77. (Mus. Cuming.)

MITRA CIRCULATA. *Mitr. testâ acuminato-fusiformi, turritâ, liris acutis, elevatiusculis, subdistantibus, undique circulatâ, interstitiis striis subtilissimè cancellatis; pallidissimè fulvâ, anfractuum parte superiori albifasciatâ; columellâ quadriplicatâ, plicis infimis subobscuris.*

THE ENCIRCLED MITRE. Shell acuminately fusiform, turreted, encircled throughout with rather elevated, somewhat distant, sharp ridges, the interstices between which are finely cancellated with striæ; very light fulvous brown, banded with white round the upper part of the whorls; columella four-plaited, lowest plaits rather obscure.

KIENER, Iconographie Coq. viv., p. 21. pl. 5. f. 13.

Hab. Island of Burias, Philippines (found in sandy mud at the depth of seven fathoms); Cuming.

This is a well defined species, fully distinguished from the *Mitra filosa* by the want of dark colour on the ridges and other particulars.

Species 78. (Mus. Cuming.)

MITRA BOVEI. *Mitr. testâ elongato-ovatâ, turriculatâ; anfractibus tuberculis parvis coronatis, striis punctatis, crebriusculis, undique cingulatis; cinereo-albicante, fasciis cinereo-violaceis duabus latiusculis ornatâ; totâ maculis parvis rotundis niveis floccatâ; columellâ quadriplicatâ; aperturâ subangustâ, intus cinereo-violaceâ.*

BOVÉ'S MITRE. Shell elongately ovate, turriculated; whorls coronated with small tubercles, encircled throughout with close-set punctured striæ; ashy white, ornamented with two rather broad bands of ashy violet, the whole flaked with numerous small

round snow-white spots; columella four-plaited; aperture rather narrow, ashy violet within.

Kiener, Iconographie Coq. viv., p. 9. pl. 2. f. 5.

Hab. Red Sea (found on the reefs at low water); Rüppell.

I must congratulate M. Kiener upon having introduced this extremely interesting coronated species, which, though not uncommon in our collections, had not previously been either described or figured.

Species 79. (Mus. Cuming.)

Mitra subulata. *Mitr. testâ acuminato-elongatâ, Terebræformi; anfractibus longitudinaliter crebrisulcatis, sulcis profundè impressis, lineis impressis spiralibus decussatis, ad decussationem puncturatis, linea superâ infra suturam sæpè profundiore; carneâ, rufo-aurantio nebulosâ; aperturâ brevi, angustâ; columellâ quadriplicatâ.*

The bodkin-shaped Mitre. Shell acuminately elongated, Terebra-shaped; whorls longitudinally closely grooved, grooves deeply impressed, crossed with impressed spiral lines, punctured at the point of crossing, uppermost line beneath the suture often deeply impressed; flesh-colour, clouded with reddish orange; aperture short, narrow; columella four-plaited.

Lamarck, Anim. sans vert., vol. vii. p. 313.

Voluta ignea, Wood.

Tiara terebralis, Swainson (Broderip).

Mitra rosea, Duclos.

Hab. Island of Annaa (found on the reefs); Cuming.

This species has very much the appearance of a *Terebra*, and as Mr. Broderip remarks, the resemblance is strengthened by the circumstance of there being one spiral line more deeply impressed than the others just beneath the suture in each volution.

For Species 80, see *Mitra*, Plate XX.

Fig. 80. (Mus. Cuming.)

Conus edentulus. An interesting species of Cone allied to the *Conus mitratus*. This shell was handed to me amongst Mr. Swainson's Mitres, with that gentleman's manuscript name of *Conohelix edentula* attached to it. Upon describing it, however, the first important feature that presented itself was the absence of any indication of plaits upon the columella. It is unquestionably a Cone, and I trust to be able to publish an account of it under the above title in Conus, Plate XLVIII.

Species 81. (Mus. Cuming.)

Mitra filosa. *Mitr. testâ ovato-fusiformi, spirâ acuminatâ, subtilissimè plano-cancellatâ, liris filosis graniferis elevatis undique cingulatâ; rosaceo-albicante, liris rubido-fuscis; columellâ quadriplicatâ.*

The thread-bound Mitre. Shell ovately fusiform, spire acuminated, very finely flatly cancellated, encircled throughout with elevated, graniferous, thread-like ridges; pinkish white, ridges reddish brown; columella four-plaited.

Lamarck, Anim. sans vert., vol. vii. p. 311.

Voluta filosa, Born, Gmelin.

Variety β. (Fig. 81 *b*.)

Testa obesior, minus acuminata.

Shell stouter, less acuminated.

Mitra nexilis, Martyn, Lamarck.

Hab. Islands of Taheite, Pacific Ocean, and Ticao and Masbate, Philippines (found in coral sand on the reefs and at the depth of six fathoms); Cuming.

I quite agree with M. Kiener in suppressing the *Mitra nexilis*; Martyn figured the var. β. under that name, not knowing probably the *Voluta filosa*, and Lamarck adopted Martyn's *Mitra nexilis* with an acknowledgement that he knew nothing of it.

82

83

84

85 a

86

85 b

87 a

88

87 b

Sowerby del. et lith.

prel. lith: Linn. imp.

MITRA.

PLATE XII.

Species 82. (Mus. Cuming.)

MITRA SCUTULATA. *Mitr. testâ ovatâ, spirâ breviusculâ, acutâ; anfractibus transversim impresso-striatis, anfractûs ultimi striis medianis evanidis; olivaceo-fuscâ, strigis albidis de suturis in medio undatim descendentibus, maculis albidis perpaucis parvis interspersis; columellâ quadriplicatâ.*

THE COBWEB-MARKED MITRE. Shell ovate, spire rather short, acute; whorls transversely impressly striated, middle striæ of the last whorl obsolete; olive-brown, with waved white streaks descending from the sutures to the middle, interspersed with a few small white spots; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 314.

Voluta scutulata, Chemnitz.

Variety? *Voluta pica*, Chemnitz.

Hab. Province of North Ilocos, island of Luzon, Philippines (found under stones at low water); Cuming.

The white waved longitudinal streaks which adorn this shell are sometimes completely divided into spots by the transverse impressed lines.

Species 83. (Mus. Cuming.)

MITRA CONUS. *Mitr. testâ obversè conicâ, spirâ brevi, acutâ, radiatim crenulato-liratâ et nodulosâ; lævi, basim versus sulcatâ; albidâ, lineis capillaribus nigricantibus remotiusculis cingulatâ, epidermide viridescente indutâ; columellâ sexplicatâ.*

THE CONE MITRE. Shell obversely conical, spire short, acute, radiately crenulately ridged and noduled; smooth, grooved towards the base; white, encircled with rather distant black hair-like lines, covered with a greenish epidermis; columella six-plaited.

Voluta Conus, Chemnitz, Conch. Cab., vol. x. pl. 150. f. 1415 and 1416.

Mitra conulus, Lamarck.

Hab. Island of Masbate, Philippines (found in mud at the roots of mango-trees); Cuming.

I do not see what reason Lamarck had for making a diminutive of the specific name given to this shell by Chemnitz.

Species 84. (Mus. Cuming.)

MITRA PAUPERCULA. *Mitr. testâ ovato-oblongâ, spirâ acutè acuminatâ, lævigatâ, ad basim striatâ; niger-rimo-fuscâ, strigis albis angustis, subundatis, longitudinaliter ornatâ; columellâ quadriplicatâ, aperturæ fauce fusco tinctâ; labro sinuoso.*

THE POOR MITRE. Shell ovately oblong, spire sharply acuminated, smooth, striated at the base; blackish brown, ornamented with slightly waved, narrow, longitudinal white streaks; columella four-plaited, interior of the aperture stained with brown; lip sinuated.

LAMARCK, Anim. sans vert., vol. vii. p. 317.

Voluta paupercula, Linnæus.

Mitra zebra, Lamarck (Ann. du Mus.).

Hab. Province of South Ilocos, island of Luzon, Philippines (found under stones at low water mark); Cuming.

This species is generally of smaller size than the *Mitra scutulata*, from which it differs in being smooth, and in the white streaks not being interrupted.

Species 85. (Fig. *a* and *b*, Mus. Cuming.)

MITRA AMPHORELLA. *Mitr. testâ ovato-oblongâ, spirâ subobtusâ; lævigatâ, basim versus sulcatâ; olivaceo-fuscâ, maculis perpaucis albis prope apicem ad basimque ornatâ, anfractuum limbo superiore lutescente; columellâ quadriplicatâ, supernè callosâ; labro sinuoso.*

THE AMPHORA-SHAPED MITRE. Shell ovately oblong, spire rather obtuse; smooth, grooved towards the base; dark olive-brown, ornamented with a few white spots near the apex and at the base, upper edge of the whorls yellowish; columella four-plaited, with a callosity at the top; lip sinuated.

Variety β. (Fig. 85 *b*.)

Testa angustior, plus sulcata, maculis albis frequentioribus.

Shell narrower, more grooved, white spots more frequent.

LAMARCK, Anim. sans vert., vol. vii. p. 316.

Hab. Islands of Luzon and Zebu, Philippines (found under stones at low water); Cuming.

The variety β. exhibits an interesting link between this species and the *Mitra scutulata*.

Species 86. (Mus. Cuming.)

MITRA NUCEA. *Mitr. testâ oblongo-ovatâ, crassissimâ, solidâ, spirâ brevi, apice parvo, acuto; lævigatâ, longitudinaliter subobsoletè striatâ; albâ, undique seriatim nigro-punctatâ, punctis remotiusculis, subobscuris, fasciis nigris duabus subindistinctis cingulatâ; columellâ sexplicatâ; aperturæ fauce pallidè carneâ.*

THE NUT MITRE. Shell oblong-ovate, very thick, solid, spire short, apex small, acute; smooth, longitudinally rather obsoletely striated; white, marked throughout with rather distant obscure rows of black dots, encircled with two somewhat indistinct black bands; columella six-plaited; interior of the aperture flesh-tinted.

Voluta nucea, Gronovius Zoophylacium, part iii. pl. 18. f. 11.

Mitra olivaria, Lamarck.

Hab. New Zealand.

This fine species was described and figured by Gronovius under the name of *Voluta nucea* long before any account of it was published by Lamarck.

Species 87. (Mus. Cuming.)

MITRA OBESA. *Mitr. testâ abbreviato-ovatâ, solidâ, supernè valdè obesâ, spirâ brevissimâ, sulcis spiralibus et radiantibus decussatim impressâ; anfractu ultimo basim versus sulcato, supra lævigato; albâ, lineis rubido-fuscis remotiusculis cingulatâ, epidermide vividè viridescente omninò indutâ; columellâ sexplicatâ.*

THE STOUT MITRE. Shell shortly ovate, solid, very stout round the upper part, spire very short, decussately impressed with spiral and radiating grooves; last whorl strongly grooved towards the base, smooth above; white, encircled with rather distant reddish brown lines, entirely covered with a bright greenish epidermis; columella six-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

I have no information concerning the locality of this extremely interesting species, of which there is another example in the collection of Thomas Norris, Esq.

Species 88. (Mus. Cuming.)

MITRA DACTYLUS. *Mitr. testâ abbreviato-ovatâ, solidâ, spirâ brevissimâ, subdecussatâ; lævigatâ, striis profundè impressis obscurè punctatis undique cingulatâ; albidâ, carneo-fuscescente nebulosâ; columellâ sexplicatâ.*

THE DATE MITRE. Shell shortly ovate, solid, spire very short, slightly decussated; smooth, encircled throughout with deeply impressed obscurely punctured striæ; whitish, clouded with light fleshy brown; columella six-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 314.

Voluta dactylus, Linnæus.

Hab. Island of Bohol, Philippines (found on the reefs); Cuming.

This species is strongly characterized by the impressed transverse lines.

89

90

91

92

93

94

95

96

97

LIBRARY OF THE ROYAL ASIATIC SOCIETY

Sowerby del et lith.

MITRA.

PLATE XIII.

Species 89. (Mus. Norris.)

MITRA USTULATA. *Mitr. testâ elongatâ, spirâ angusto-acuminatâ, transversim subtilissimè striatâ; albidâ, lineis capillaribus fuscescentibus remotiusculis cingulatâ, maculis grandibus ustulato-fuscis nebulosâ; columellâ sexplicatâ.*

THE BURNT MITRE. Shell elongated, spire narrowly acuminated, transversely very finely striated; whitish, encircled with rather distant brown hair lines, and clouded with large burnt brown spots; columella six-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This species is at present unique in the collection of Thomas Norris, Esq.

Species 90. (Mus. Cuming.)

MITRA LACTEA. *Mitr. testâ abbreviato-fusiformi, lævigatâ, transversim subtilissimè punctato-striatâ; intus extusque lacteâ; columellâ quadriplicatâ; labro effuso.*

THE MILK-WHITE MITRE. Shell abbreviately fusiform, smooth, transversely very finely striated with punctures; milk-white within and without; columella four-plaited; lip effused.

LAMARCK, Anim. sans vert., vol. vii. p. 312.

Voluta cornicularis, var., Chemnitz.

Hab. Mediterranean, coast of Sicily; Philippi.

This species, as Lamarck concluded, is quite distinct from the *Mitra cornicularis*.

Species 91. (Mus. Cuming.)

MITRA ABBATIS. *Mitr. testâ ovato-fusiformi, anfractibus contiguis, ultimo ad basim contracto; albâ, maculis ferrugineis peculiariter pictâ; columellâ quadriplicatâ; aperturæ fauce pallidissimè aurantiâ.*

THE ABBOT'S MITRE. Shell ovately fusiform, whorls contiguous; white, peculiarly painted with rusty brown spots; columella four-plaited; interior of the aperture faintly tinged with orange.

CHEMNITZ, Conch. Cab., vol. xi. p. 19. pl. 177. fig. 1709 and 1710.

Mitra contracta, Swainson.

Hab. Matnog, island of Luzon, Philippines (found on the reefs); Cuming.

Care should be taken not to confound this excellent species with the *Mitra chrysostoma*, a specimen of which has been figured for it by M. Kiener. The *Mitra abbatis* is a narrower and uniformly smaller shell than the *Mitra chrysostoma*, the whorls of the spire are more contiguous, and have no longitudinal grooves to give it any granular appearance; the style of painting is moreover distinct. The contiguous arrangement of the whorls reminds one of the movement of a telescope.

Species 92. (Mus. Norris.)

MITRA CREBRILIRATA. *Mitr. testâ acuminato-turritâ, longitudinaliter subobliquè liratâ, liris angustis, crebris, interstitiis impresso-cancellatis; olivaceâ vel olivaceo-fuscâ, lineâ unicâ pallidâ infra suturas plerumque cinctâ; columellâ quadriplicatâ.*

THE CLOSE-RIDGED MITRE. Shell acuminately turreted, longitudinally rather obliquely ridged, ridges narrow, close, interstices impressly cancellated; olive or olive-brown, generally encircled beneath the suture with a single pale line; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Mitra rosea, Kiener (not of Duclos).

Hab. Ceylon.

Figured by M. Kiener for the *Mitra rosea* of Duclos, which is the *Voluta ignea* of Wood, *Mitra subulata of* Lamarck, for which see Plate XI. fig. 79.

Species 93. (Mus. Belcher).

MITRA BELCHERI. *Mitr. testâ elongato-turritâ, spirâ valdè productâ, sulcis angustis, exarato-exsculptis undique cingulatâ; albidâ, epidermide corneâ fusco-nigricante indutâ; columellâ quadriplicatâ.*

BELCHER'S MITRE. Shell elongately turreted, spire very much produced, encircled throughout from the base to the apex with narrow deeply cut grooves; whitish, covered with a horny brownish black epidermis; columella four-plaited.

HINDS, Ann. and Mag. Nat. Hist., vol. xi. p. 16.

Hab. Gulfs of Nicoya and Papagayo, Central America (dredged from a muddy floor at the depth of seventeen fathoms); Hinds.

Two fine specimens of this peculiarly grooved species were collected at the above-named localities by Captain Belcher; one, for the drawing of which I am indebted to Mr. Hinds, in his own collection; the other, which has furnished me with the above description, in that of Thomas Norris, Esq.

Species 94. (Mus. Cuming.)

MITRA POLITA. *Mitr. testâ acuminato-turritâ, lævigatâ, politâ, ad basim sulcatâ, prope apicem subtilissimè plicato-costatâ; fuscâ vel cinereo-fuscâ, lineâ unicâ pallidè flavicante cingulatâ; columellâ quadriplicatâ.*

THE POLISHED MITRE. Shell acuminately turreted, smooth, polished, grooved at the base, very finely plicately ribbed near the apex; brown or ashy brown, encircled with a single pale yellowish belt; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Zebu and Luzon, Philippines (found in mud on the shore at low water, and at the depth of six or seven fathoms); Cuming.

At the desire of one or two gentlemen whose opinions in conchological matters cannot be lightly esteemed, I have described the *Mitræ polita* and *crebrilirata* as new and distinct species; it must be admitted, however, that I have felt strongly tempted to regard the former as the Eastern analogue of the *Mitra ebenus, smooth variety*, of the Mediterranean, and the latter as the analogue of the *Mitra ebenus, ribbed variety*, of the same region.

Species 95. (Mus. Cuming.)

MITRA VARIABILIS. *Mitr. testâ oblongo-ovatâ, medio subobesâ, lævigatâ, transversim subtilissimè punctato-striatâ; lutescente-olivaceâ, lineis fuscis capillaribus remotiusculis cinctâ, anfractu ultimo zonâ unicâ cærulescente-albâ medio ornato; columellâ quadriplicatâ; aperturæ fauce olivaceo-fuseâ.*

THE VARIABLE MITRE. Shell oblong-ovate, rather stout in the middle, smooth, transversely very finely striated with punctures; yellowish olive, encircled with rather distant brown hair lines, last whorl ornamented with a single blueish white zone round the middle; columella four-plaited; interior of the aperture olive-brown.

REEVE, Pro. Zool. Soc., 1844.

Hab. Torres Strait (found under stones at low water); Dring.

The variable character of this species consists in its being sometimes flaked or indistinctly streaked with blueish white.

Species 96. (Mus. Cuming.)

MITRA STRIATULA. *Mitr. testâ acuminato-ovatâ, lævigatâ, striis lineisve leviter elevatis elegantissimè cinctâ; lutescente-olivaceâ, maculis albidis perpaucis irregulariter conspersâ; columellâ quinqueplicatâ; aperturæ fauce olivaceo pallidè tinctâ.*

THE FINELY STRIATED MITRE. Shell acuminately ovate, smooth, very elegantly encircled with slightly raised lines or striæ; yellowish olive, sprinkled here and there with a very few white spots; columella five-plaited; interior of the aperture faintly stained with olive.

LAMARCK, Anim. sans vert., vol. vii. p. 313.

Hab. Island of St. Vincent, West Indies (found on the coral reefs); Guilding.

The fine transverse striæ of this shell are of a very peculiar character, slightly raised, and of rather a darker colour than the intermediate ground.

Species 97. (Mus. Cuming.)

MITRA CYLINDRACEA. *Mitr. testâ cylindraceo-ovatâ, utrinque attenuatâ, sulcis capillaribus puncturatis, supernè remotiusculis, cingulatâ; lutescente-olivaceâ, maculis albis irregularibus infra suturas ornatâ, anfractu ultimo in medio maculato-fasciato; columellâ quadriplicatâ; aperturæ fauce fuscescente.*

THE CYLINDRICAL MITRE. Shell cylindrically ovate, attenuated at each end, encircled with punctured hair-like grooves rather distant towards the upper part; yellowish olive, ornamented beneath the sutures with irregular white spots, last whorl with an interrupted band of spots round the middle; columella four-plaited; interior of the aperture light brown.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The painting of this shell is not much unlike that of the *Mitra variabilis*.

98

99

100

101

102

103

104 *a*

105

104 *b*

Sowerby del. et lith.

prel. lith. Linn. imp.

MITRA.

PLATE XIV.

Species 98. (Mus. Cuming.)

MITRA TESTACEA. *Mitr. testâ acuminato-turritâ, solidâ, transversim subobsoletè striatâ, basi contorto-recurvâ; intus extusque rubro-fuscescente; columellâ quinqueplicatâ.*

THE TESTACEOUS MITRE. Shell acuminately turreted, solid, transversely rather obsoletely striated, base recurved in a twisted manner; light reddish brown within and without; columella five-plaited.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

The colour of this shell is of one uniform light reddish brown tint throughout.

Species 99. (Mus. Norris.)

MITRA SANGUISUGA. *Mitr. testâ cylindraceo-fusiformi, transversim impresso-striatâ, longitudinaliter costatâ, costis obtuso-granulatis; cærulescente-albâ aut fulvâ, costis sanguineo-rubris, apice basique fusco-nigricantibus; columellâ quadriplicatâ.*

THE BLOOD-SUCKER MITRE. Shell cylindrically fusiform, transversely impressly striated, longitudinally ribbed, ribs obtusely granulated; blueish white or yellowish, ribs blood-red, base and apex brownish black; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 310.

Voluta sanguisuga, Linnæus.

Hab. Island of Ticao, Philippines (found among coral sand at low water); Cuming.

A well-known species of which the *Mitra stigmataria* might be considered a variety differing in having merely one or two spots of blood-red colouring on each rib.

Species 100. (Mus. Cuming.)

MITRA EFFUSA. *Mitr. testâ acuminato-turritâ, transversim elevato-striatâ, striis confertis, alternis minimis; fuscâ vel atro-castaneâ; columellâ quadriplicatâ, basi truncatâ; aperturæ fauce albâ; labro crenulato.*

THE EFFUSED MITRE. Shell acuminately turreted, transversely elevately striated, striæ close-set, alternate striæ very small; brown or very dark chestnut; columella four-plaited, truncated at the base; interior of the aperture white; lip crenulated.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Guacomayo, Central America, and Gallapagos Islands (found in sandy mud at the depth of twelve fathoms); Cuming.

This shell is of an uniform dark chestnut colour, closely encircled throughout with raised striæ, alternately large and small.

Species 101. (Mus. Norris.)

MITRA RUGOSA. *Mitr. testâ fusiformi, spirâ acutè acuminatâ; anfractibus supernè depressis, medio contractis, liris rugosis nodulosis longitudinalibus et transversis fortiter clathratâ; albâ, maculis punctisque fuscis irregulariter conspersâ; columellâ quinqueplicatâ; aperturæ fauce valdè striatâ.*

THE ROUGH MITRE. Shell fusiform, spire sharply acuminated, whorls depressed at the upper part, contracted in the middle, strongly latticed with rough noduled longitudinal and transverse ridges; white, irregularly sprinkled with spots and speckles of brown; columella five-plaited; interior of the aperture strongly striated.

SOWERBY, Tankerville, Cat. Appendix.

Hab. —— ?

The specimen above described in the collection of Thomas Norris, Esq., formerly in that of the Earl of Tankerville, is the only one, I believe, at present known.

Species 102. (Mus. Cuming.)

MITRA PULLATA. *Mitr. testâ fusiformi, spirâ acuminato-turritâ; anfractibus supernè subangulatis, transversim impresso-striatis, longitudinaliter plicato-costatis, costis supernè obtuso-mucronatis; aurantio-lutescente, lineâ subtilissimâ fuscâ cingulatâ, anfractu ultimo fasciâ latâ nigricante-fuscâ ornatâ; columellâ quadriplicatâ.*

THE MOURNING MITRE. Shell fusiform, spire acuminately turreted; whorls slightly angulated at the upper part, transversely impressly striated, longitudinally plicately ribbed, ribs obtusely pointed at the top; orange-yellow, encircled with a very fine brown line, last whorl ornamented with a broad blackish brown band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs); Cuming.

The *Mitra pullata* is exactly intermediate between the *Mitræ balteolata* and *plicatæ*, differing sufficiently from both to constitute a distinct species.

Species 103. (Mus. Cuming.)

MITRA ANNULATA. *Mitr. testâ cylindraceo-ovatâ, spirâ brevi, acutissimâ; anfractibus transversim costatis, costis angustis, acutis, confertis, annuliformibus, alternis minoribus, interstitiis longitudinaliter cancellatis; columellâ quinqueplicatâ; aperturâ longiusculâ.*

THE RINGED MITRE. Shell cylindrically ovate, spire short, very sharp; whorls transversely ribbed, ribs narrow, sharp, close-set, ring-like, alternate ribs smaller, interstices longitudinally cancellated; columella five-plaited; aperture rather long.

Mitra nitens, Kiener (not of Risso, nor Blainville), Iconographie Coq. viv., p. 113. pl. 29. f. 96.

Hab. Zanzibar, east coast of Africa.

The entire surface of this species is encircled with sharp, close-set, ring-like ribs.

Species 104. (Fig. *a*, Mus. Norris; Fig. *b*, Mus. Cuming.)

MITRA CORONATA. *Mitr. testâ ovato-fusiformi, anfractibus transversim liratis, liris plus minusve plano-obtusis, interstitiis puncturatis, anfractuum limbo superiore irregulariter crenato-coronato; fuscâ aut rubido-fuscâ, sparsim albipunctatâ, balteo flavicante unico angusto infra crenulas albas limbi coronati plerumque cingulatâ; columellâ quinqueplicatâ.*

THE CORONATED MITRE. Shell ovately fusiform, whorls transversely ridged, ridges more or less flatly obtuse, interstices punctured, upper edge of the whorls irregularly crenately coronated; brown or reddish brown, dotted here and there with white, generally encircled with a single narrow yellowish belt beneath the white crenules of the coronated edge; columella five-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 317.

Voluta coronata, Chemnitz.

Hab. Islands of Bohol, Ticao and Luzon, Philippines (found on the reefs and in clay mud at the depth of seventeen fathoms); Cuming.

This species chiefly varies in the crenules of the coronated edge being of a more or less prominent character; in some specimens they are almost obsolete, and the shell ornamented with large white spots.

Species 105. (Mus. Cuming.)

MITRA OLEACEA. *Mitr. testâ oblongo-ovatâ, Buccini-formi, spirâ brevi; anfractibus convexis, lævigatis, epidermide corneâ olivaceo-fuscâ nitidâ indutâ; columellâ quadriplicatâ, basi truncatâ; labro in medio leviter contracto.*

THE OLIVE-LIKE MITRE. Shell oblong-ovate, Buccinum-shaped, spire short; whorls convex, smooth, covered with a shining olive-brown horny epidermis.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

There is a peculiarity in the form of this species which distinguishes it from any other of the Melania-like group.

107

106

108

109

110

112 a

111

112 b

114

113

Sowerby del et lith.

prel: lith: Jann: imp.

MITRA.

PLATE XV.

Species 106. (Mus. Brit.)

MITRA GRŒNLANDICA. *Mitr. testâ ovatâ, utrinque subattenuatâ, lævigatâ albidâ, epidermide fuscâ indutâ; aperturæ fauce albâ; columellâ quadriplicatâ.*

THE GREENLAND MITRE. Shell ovate, somewhat attenuated at both ends, smooth, whitish, covered with a brown epidermis; interior of the aperture white; columella four-plaited.

Hab. Greenland.

GRAY, MSS. British Museum.

I am not aware whether any description of this little northern species has yet been published.

Species 107. (Mus. Cuming.)

MITRA OBELISCUS. *Mitr. testâ acuminato-turritâ, spirâ acutâ; anfractibus longitudinaliter costatis, costis angustis, crebris, interstitiis impresso-cancellatis; lutescente-fuscâ, lineâ unicâ albâ cingulatâ; columellâ quadriplicatâ, basi contorto-recurvâ.*

THE OBELISK MITRE. Shell acuminately turreted, spire sharp; whorls longitudinally ribbed, ribs narrow, close-set, interstices impressly cancellated; yellowish brown, encircled with a single white line; columella four-plaited; base recurved in a twisted manner.

REEVE, Pro. Zool. Soc., 1844.

Hab. Bais, island of Negros, Philippines (found among coarse sand and stones at the depth of seven fathoms); Cuming.

The whorls are numerous in this species and rather contiguous.

Species 108. (Mus. Cuming.)

MITRA FUNEREA. *Mitr. testâ abbreviato-fusiformi, spirâ acutâ; anfractibus rotundis, liris transversis et longitudinalibus creberrimè decussatis, anfractu ultimo lævigato, ad basim sulcato; fuscâ, balteo unico angusto flavicante cingulato; columellâ triplicatâ, basi recurvâ.*

THE FUNEREAL MITRE. Shell shortly fusiform, spire sharp, whorls round, very closely decussated with longitudinal and transverse ridges, last whorl smooth, grooved at the base; dark mahogany-brown, encircled with a single narrow yellow belt; columella three-plaited; base recurved.

REEVE, Pro. Zool. Soc., 1844.

Hab. Pasacao, South Camarinos, island of Luzon, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

The whorls of the spire have a peculiar rounded decussated appearance, with the yellow belt just falling in the sutural depression.

Species 109. (Mus. Cuming.)

MITRA NIGRA. *Mitr. testâ ovatâ, crassiusculâ, subventricosâ, spirâ brevi, lævigatâ, ad basim exiliter sulcatâ; intus extusque purpureo-nigricante; columellâ quadriplicatâ, callositate albâ supernè armatâ.*

THE BLACK MITRE. Shell ovate, rather thick, somewhat ventricose, spire short, smooth, faintly grooved at the base; purple-black within and without; columella four-plaited, armed with a white callosity at the upper part.

QUOY, Voyage de l'Astrolabe, pl. 45. f. 16 to 18.

Hab. Carteret Harbour, New Ireland; Quoy.

A dark, shining, purple-black, oval shell with a small white callosity on the body whorl, at the termination of the lip.

Species 110. (Mus. Cuming.)

MITRA FUSCA. *Mitr. testâ cylindraceo-oblongâ, in medio leviter contractâ, spirâ subobtusâ, prope apicem subtilissimè punctato-striatâ; lævigatâ, albidâ, epidermide nigricante-fuscâ indutâ; columellâ quadriplicatâ, leviter umbilicatâ; labro basim versus effuso.*

THE BROWN MITRE. Shell cylindrically oblong, slightly contracted in the middle, spire rather obtuse, very finely striated with punctures near the apex; smooth, whitish, covered with a dark brown epidermis; columella four-plaited, slightly umbilicated; lip effused towards the base.

Mitrella fusca, Swainson, Zool. Illus., Second Series.

Hab. Island of Madeira (found in rocky places at low water); Cuming.

Distinguished by its peculiarly contracted cylindrical form.

Species 111. (Mus. Cuming.)

MITRA VARIEGATA. *Mitr. testâ suboblongo-ovatâ, transversim regulariter sulcatâ, anfractuum limbo superiori subobsoletè crenulato; albidâ, olivaceo-spadiceo nebulatâ et variegatâ; columellâ quinqueplicatâ.*

THE VARIEGATED MITRE. Shell rather oblong-ovate, transversely regularly grooved, upper edge of the whorls somewhat obsoletely crenulated; whitish, clouded and variegated with pale olive-bay; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Ticao and Mindanao, Philippines (found on the reefs at low water); Cuming.

The whorls of this shell are very slightly angulated, and the clouded variegated painting only appears below the angle.

Species 112. (Fig. *a*, Mus. Brit.; Fig. *b*, Mus. Norris.)

MITRA SERPENTINA. *Mitr. testâ ovato-fusiformi, solidiusculâ, transversim regulariter impresso-striatâ, striis prominentè excavato-punctatis; albâ, aurantio subindistinctè tinctâ et zonatâ, lineis rufo-fuscis obliquè undatis, serpentinis, longitudinaliter pictâ; columellâ sexplicatâ.*

THE SERPENT-MARKED MITRE. Shell ovately fusiform, rather solid, transversely regularly impressly striated, striæ prominently excavately punctured; white, rather indistinctly stained and zoned with orange, longitudinally painted with obliquely waved, serpentine, red-brown lines; columella six-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 306.

Hab. Island of Burias, Philippines (found in sandy mud at the depth of seven fathoms); Cuming.

This very beautiful species may be recognised by its orange-tinted bands, and the serpentine character of its longitudinal markings.

Species 113. (Mus. Norris.)

MITRA CÆRULEA. *Mitr. testâ subfusiformi-oblongâ, transversim regulariter sulcatâ, sulcis angustis, puncturatis; cærulescente-albicante, anfractu ultimo, fasciâ latissimâ cæruleâ, marginibus albimaculatis, cincto; basi et aperturæ fauce aurantio-fuscescentibus; columellâ quinqueplicatâ, umbilicatâ.*

THE BLUE MITRE. Shell somewhat fusiformly oblong, transversely regularly grooved, grooves narrow, punctured; blueish white, last whorl encircled with a broad blue band, the edges of which are spotted with white; base and interior of the aperture orange-brown; columella five-plaited, umbilicated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Islands of Ticao and Capul, Philippines (found on the reefs at low water); Cuming.

The white flake-like spots which appear on the upper edge of the blue band of the last whorl are just visible on the whorls of the spire above the sutures.

Species 114. (Mus. Cuming.)

MITRA TRISTIS. *Mitr. testâ oblongâ, spirâ breviusculâ, acuminatâ, lævigatâ, basim versus sulcatâ, longitudinaliter obsoletè plicato-costatâ; nigricante-fuscâ, lineâ albidâ cingulatâ, costis supernè albidis, epidermide corneâ indutâ; columellâ quadriplicatâ; aperturæ fauce albido-purpurascente; labro in medio contracto.*

THE SAD MITRE. Shell oblong, spire rather short, acuminated, smooth, grooved towards the base, longitudinally obsoletely plicately ribbed; blackish brown, encircled with a white line; upper part of the ribs white, covered with a horny epidermis; columella four-plaited; interior of the aperture whitish purple; lip contracted in the middle.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. St. Elena West Columbia, and Gallapagos Islands (found in sandy mud at the depth of from six to ten fathoms); Cuming.

This shell, which has a very sombre appearance, may be recognised by the coronated-like character imparted to the spire by the white ends of the ribs which are almost obsolete.

115

116

117

118

119

120

121

122

123

124

Sowerby del et lith.

prel: lith: Linnædimp.

MITRA.

PLATE XVI.

Species 115. (Mus. Cuming.)

MITRA FULGETRUM. *Mitr. testâ subfusiformi, solidiusculâ; anfractibus supernè leviter angulatis, transversim impresso-sulcatis, sulcis angustis, subtilissimè puncturatis; rubido-castaneâ, strigis albis prominentibus undatis longitudinaliter ornatâ; columellâ quadriplicatâ.*

THE LIGHTENING MITRE. Shell somewhat fusiform, rather solid, whorls slightly angulated at the upper part, transversely impressly grooved, grooves narrow, very finely punctured; reddish-chesnut, ornamented with conspicuous waved longitudinal white streaks; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Burias, Philippines (found under stones at low water); Cuming.

The white longitudinal waved streaks are very strikingly depicted.

Species 116. (Mus. Cuming.)

MITRA PRETIOSA. *Mitr. testâ fusiformi, spirâ acuminato-turritâ, transversim subtiliter costatâ, longitudinaliter confertim impresso-sulcatâ; suturis subprofundis; albidâ, rubido-fusco balteatâ et punctatâ.*

THE PRECIOUS MITRE. Shell fusiform, spire acuminately turreted, transversely finely ribbed, longitudinally closely impressly grooved; sutures rather deep; white, belted and dotted with reddish brown.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

In painting this shell reminds one of the *Mitra crenifera*, the sculpture is, however, of quite a different pattern.

Species 117. (Mus. Cuming.)

MITRA BACILLUM. *Mitr. testâ cylindraceâ, subfusiformi, spirâ brevi, acuminatâ, basem versus sulcatâ; viridi-fuscescente, strigis albidis undatis longitudinalibus ornatâ; aperturâ longiusculâ, angustâ; columellâ biplicatâ.*

THE LITTLE STAFF MITRE. Shell cylindrical, somewhat fusiform, spire short, acuminated, grooved towards the base; greenish brown, ornamented with longitudinal white waved streaks; aperture rather long, columella two-plaited.

LAMARCK, Anim. sans vert. vol. vii. p. 321.

Deshayes, Mag. de Zoologie, 1831. *Mollusques*, pl. 7.

Hab. Malacca (found in coarse sand at the depth of ten fathoms); Cuming. New Holland; Deshayes.

Lamarck describes this shell as being six-plaited, in the specimen before me there are, however, only two distinct columellar plaits, the lower plait-like elevations being formed by the ridges which separate the basal grooves.

Species 118. (Mus. Cuming.)

MITRA AUSTRALIS. *Mitr. testâ ovato-turritâ, subangustâ, lævigatâ, politâ; fuscâ, balteo unico albo, fuscescente-tincto, cingulatâ; columellâ fuscâ, quadriplicatâ, plicis albis; aperturâ brevi.*

THE SOUTHERN MITRE. Shell ovately turreted, rather narrow, smooth, polished; brown, encircled throughout with a single white brown-stained belt; columella brown, four-plaited, plaits white; aperture short.

SWAINSON, Zoological Illustrations, First Series, pl. 18. *Mitra melaleuca*, Quoy.

Hab. Van Dieman's Land; Humphrey M.S.S.; New Holland; Quoy.

This species, which is an extremely interesting one, was described and figured by Mr. Swainson ten years or more before it was published by M. Quoy.

Species 119. (Mus. Cuming.)

MITRA GRUNERI. *Mitr. testâ abbreviato-fusiformi, subharpæformi, spirâ brevi, turritâ, acutâ; longitudinaliter acutè costatâ, costis supernè mucronato-tuberculatis, anfractuum parte superiori plano-angulatâ; olivaceo-viridescente, lineis tribus rubido-fuscis subdistantibus inter costas seriatim pictâ; columellâ quinqueplicatâ.*

GRUNERS MITRE. Shell shortly fusiform, somewhat harp-shaped, spire short, turreted, acute; longitudinally sharply ribbed, ribs sharp pointedly tuberculated above, upper part of the whorls flatly angulated; olive-green, painted in the interstices between the ribs with three rather distant transverse reddish-brown lines; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found on the reefs at low water); Cuming.

It is somewhat a matter of surprise that this very characteristic species, which is not uncommon, has never been described. I dedicate it with much pleasure to E. L. G. Grüner, Esq., of Bremen.

Species 120. (Mus. Cuming.)

MITRA FLAMMEA. *Mitr. testâ abbreviato-fusiformi, spirâ acutè acuminatâ; anfractibus supernè leviter angulatis, undique transversim sulcatis; olivaceo-viridescente flammis albidis subirregularibus longitudinaliter ornatâ; columellâ quinqueplicatâ, aperturâ longiusculâ, fauce castaneo-fuscâ.*

THE FLAME-MARKED MITRE. Shell shortly fusiform, spire sharply acuminated; whorls slightly angulated at the upper part, transversely grooved throughout; olive green, ornamented with rather irregular longitudinal white flames; columella five-plaited, aperture rather long, interior deeply stained with chesnut-brown.

QUOY, Voy. de l'Astrolabe, pl. 45 *bis.* f. 23–25.

Hab. St. Nicolas, Island of Zebu, Philippines (found in sandy mud at the depth of three fathoms); Cuming.

This species, which M. Kiener considers may be the young of the *Mitra granatina*, has no analogy whatever with it. The *Mitra bacillum* is the nearest allied species, but differs materially in not being grooved throughout, in the spire being less acuminated and in the white waved streaks being of a more decided and regular character.

Species 121. (Mus. Cuming.)

MITRA CALIGINOSA. *Mitr. testâ ovato-fusiformi, solidiusculâ, spirâ breviusculâ; anfractibus convexis, lævigatis, transversim impresso-striatis; albâ, epidermide corneâ nigricante undique indutâ; columellâ quinqueplicatâ.*

THE GLOOMY MITRE. Shell ovately fusiform, rather solid, spire rather short; whorls convex, smooth, transversely impressly striated; white, entirely covered with a blackish horny epidermis; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

I have no locality for this species which is a rather solid white shell closely enveloped by a dark blackish spidermis.

Species 122. (Mus. Cuming.)

MITRA FUNICULATA. *Mitr. testâ abbreviato-fusiformi, spirâ breviusculâ; anfractibus supernè subangulatis, liris angustis elevatis subdistantibus undique funiculatis, interstitiis striis subtilissimè cancellatis; roseo-albicante, epidermide fuscescente indutâ, liris fuscescente-punctatis; columellâ quadriplicatâ, plicis infimis subobscuris; aperturâ longiusculâ.*

THE CORDED MITRE. Shell shortly fusiform, spire rather short; whorls slightly angulated at the upper part, corded throughout with rather distant narrow elevated ridges, the interstices between which are very finely cancellated with striæ; pinkish white, covered with a light brown epidermis; columella four-plaited, lowest plaits somewhat obscure; aperture rather long.

REEVE, Pro. Zool. Soc., 1844.

Hab. Isle of Plata, West Columbia (found in coral sand at the depth of fourteen fathoms); Cuming.

A species intermediate between the *Mitræ circulata* and *sulcata*.

Species 123. (Mus. Cuming.)

MITRA PICTA. *Mitr. testâ elongato-ovatâ, tenuiculâ, spirâ subobtusâ, transversim confertim punctato-striatâ; albidâ, rubido-fusco tessellato-variegatâ; columellâ quadriplicatâ; aperturâ subeffusâ.*

THE PAINTED MITRE. Shell elongately ovate, rather thin, spire somewhat obtuse, transversely closely striated with punctures; white, tessellately variegated with reddish brown; columella four-plaited; aperture slightly effused.

Mitra tessellata, Kiener (not of Martyn, nor Swainson).

Hab. ——?

A light prettily painted shell, the entire surface of which is indented with close set rows of punctures.

Species 124. (Mus. Cuming.)

MITRA ATTENUATA. *Mitr. testâ attenuato-fusiformi, spirâ subturritâ; anfractibus supernè angulatis, liris angustis compressis elevatis subdistantibus undique cingulatis, interstitiis striatis; albidâ, epidermide fuscâ indutâ; columellâ triplicatâ; aperturâ longiusculâ, angustâ.*

THE ATTENUATED MITRE. Shell attenuately fusiform, spire somewhat turreted; whorls angulated at the upper part, encircled throughout with narrow compressed elevated ridges, the interstices between which are striated; whitish, covered with a brown epidermis; columella three-plaited; aperture rather long and narrow.

Tiara attenuata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Isle of Cana, Central America (found on a rocky bottom at the depth of twenty-eight fathoms); Cuming.

The sculpture of this species is very nearly the same as that of the *Mitra funiculata*; the form is however so peculiarly attenuated that it may be distinguished without difficulty.

125

126

127

128

129

130

131 a

131 b

132 b

132 a

Sowerby del. et lith.

prel. lith. Linn. imp.

MITRA.

PLATE XVII.

Species 125. (Mus. Cuming.)

MITRA MUCRONATA. *Mitr. testâ acuminato-ovatâ, spirâ acutâ; anfractibus supernè angulatis, longitudinaliter costatis, costis mucronato-tuberculatis, transversim impresso- striatis, striis subpunctatis; albidâ, ferrugineo-fusco fasciatâ, fasciâ basali latissimâ; columellâ quinqueplicatâ; aperturâ breviusculâ, fauce striatâ.*

THE POINTED MITRE. Shell acuminately ovate, spire sharp; whorls angulated, longitudinally ribbed, ribs pointedly tuberculated, transversely impressly striated, striæ slightly punctured; whitish, banded with rusty brown, basal band very broad; columella five-plaited; aperture rather short, interior striated.

Tiara mucronata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Tahiti, Pacific Ocean (found in soft muddy sand at low water within the reef); Cuming.

This species may be recognised by its prickly tuberculated ribs.

Species 126. (Mus. Norris.)

MITRA CRUENTATA. *Mitr. testâ elongato-ovatâ, spirâ acuminato-turritâ; longitudinaliter costatâ, costis angustis, supernè latioribus, transversim impresso-striatâ; fuscâ, balteo albo unico angusto cingulatâ, costis rufo- aurantiis; columellâ quadriplicatâ, aperturâ brevi.*

THE BLOOD-DYED MITRE. Shell elongately ovate, spire acuminately turreted, longitudinally ribbed, ribs narrow, wider at the uppermost part, transversely impressly striated; brown, encircled with a narrow white belt, ribs reddish orange; columella four-plaited; aperture short.

Voluta cruentata, Chemnitz, Conch. Cab., vol. x. p. 171. pl. 151. f. 1438 and 1439.

Mitra harpœformis, Lamarck, Kiener.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The name attached to this species by Chemnitz is suggested by the bright orange red colour of the longitudinal ribs, which have a rather striking appearance on account of the dark brown ground colour of the shell.

Species 127. (Mus. Cuming.)

MITRA LINEATA. *Mitr. testâ abbreviato-fusiformi, spirâ subangulato-turritâ, liris angustis elevatis subdistantibus undique cinctâ, interstitiis convexis, longitudinaliter subtilissimè striatis; albidâ, castaneo hinc et hinc tinctâ, liris castaneis; columellâ quadriplicatâ, plicis infimis subobscuris.*

THE LINEATED MITRE. Shell shortly fusiform, spire rather angularly turreted, encircled throughout with rather distant narrow elevated ridges, the interstices between which are convex and longitudinally very minutely striated; whitish, stained here and there with chesnut, ridges chesnut; columella four-plaited, lowest plaits rather obscure.

Tiara lineata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Salango, West Columbia (found in sandy mud at the depth of ten fathoms); Cuming.

Allied to the *Mitra funiculata* but easily distinguished by the colour of the ridges and different style of sculpture in the interstices.

Species 128. (Mus. Cuming.)

MITRA CONCENTRICA. *Mitr. testa acuminato-ovatâ, subfusiformi, longitudinaliter concentricè costatâ, costis supernè mucronatis, interstitiis impresso-striatis; albidâ, ferrugineo-fusco hinc et hinc maculato- tinctâ, ad basemque fasciatâ; columella quinqueplicatâ; aperturæ fauce striatâ.*

THE CONCENTRIC MITRE. Shell acuminately ovate, somewhat fusiform, longitudinally concentrically ribbed, ribs pointed at the upper part, interstices impressly striated; whitish, stained here and there with spots of rusty brown, with a broad band round the base; columella five-plaited; interior of the aperture striated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Isle of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

This species is very closely allied to the *Mitra mucronata* from which it only differs in the concentric disposition of the ribs, and in their being denuded of tubercles.

Species 129. (Mus. Norris.)

MITRA SENEGALENSIS. *Mitr. testâ fusiformi, spirâ acutè acuminatâ; anfractibus lævigatis, supernè tumidiusculis;*

livido-olivaceâ, flammulis perpaucis albidis longitudinaliter ornatâ; columellâ triplicatâ; aperturæ fauce livido-castaneâ.

THE SENEGAL MITRE. Shell fusiform, spire sharply acuminated; whorls smooth, rathen swollen round the upper part; livid olive, longitudinally ornamented with a very few white flames; columella three-plaited; interior of the aperture livid chesnut.

REEVE, Pro. Zool. Soc., 1844.

Hab. Senegal; Petit.

A very characteristic species, quite distinct from any hitherto described.

Species 130. (Mus. Norris.)

MITRA IMPRESSA. *Mitr. testâ elongatâ, sub-Terebræformi, longitudinaliter subtiliter costellatâ, costellis lævigatis, interstitiis transversim peculiariter impresso-sulcatis; fuscescente-rubidâ, macularum serie unicâ subindistinctâ cingulatâ, costellis albidis; columellâ quinqueplicatâ, basi leviter recurvâ.*

THE IMPRESSED MITRE. Shell elongated, somewhat Terebra-shaped, longitudinally very finely ribbed, ribs smooth, transversely peculiarly impressly grooved; brownish red, encircled with a rather indistinct row of spots, ribs whitish; columella five-plaited, base slightly recurved.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

A truly interesting species, of which this is the only specimen I have seen. It is of a deep brick-red colour covered with close whitish longitudinal ribs, each whorl being encircled round the middle with an indistinct row of spots of a darker red.

Species 131. (Fig. *a*, Mus. Norris; Fig. *b*, Mus. Cuming.)

MITRA SEMIFASCIATA. *Mitr. testâ ovato-oblongâ, spirâ subturritâ, lævigatâ; longitudinaliter subconcentricè costellatâ, costellis confertis, supernè, crassulatis; anfractibus supernè albido-cinereis, infra fulvo-rubris aut cinereo-cærulescentibus, lineis fuscis duabus vel tribus angulatis; columellâ quadriplicatâ.*

THE HALF-BANDED MITRE. Shell ovately oblong, spire somewhat turreted, smooth; longitudinally rather concentrically ribbed, ribs close set, thickened at the upper part; whorls pale ash colour above, yellowish-red or ashy-blue beneath, encircled with two or three brown lines; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 319.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

M. Kiener has confounded Swainson's *Mitra rigida* with this; a very distinct species for which see Plate XXII.

Species 132. (Fig. *a*, Mns. Norris; Fig. *b*, Mus. Cuming.)

MITRA FUSIFORMIS. *Mitr. testâ ovato-fusiformi, spirâ acuminato-turritâ; anfractibus supernè angulatis, infra angulum longitudinaliter costatis, costis noduloso-granosis, granulis supremis valdè prominentibus, transversim impresso-striatis; albidâ, aurantio-fuscescente tessellato-tinctâ; columellâ quadriplicatâ, aperturæ fauce striatâ.*

THE FUSIFORM MITRA. Shell ovately fusiform, spire acuminately turreted; whorls angulated at the upper part, longitudinally ribbed beneath the angle, ribs nodulously granulated, highest granules very prominent, transversely impressly striated; whitish, tessellately stained with orange brown; columella four-plaited, interior of the aperture striated.

KIENER, Iconographie Coq. viv. p. 99. pl. 29. f. 97.

Hab. Island of Ticao, Philippines (found on the sands); Cuming. Zanzibar (found on the reefs at low water); Thorn.

Closely allied, but for its fusiform shape, to the *Mitra mucronata.*

134 a

133

135

134 b

136

137

138

139

140

141

ROYAL ASIATIC SOCIETY — LIBRARY OF THE BOMBAY BRANCH OF THE

MITRA.

PLATE XVIII.

Species 133. (Mus. Cuming.)

MITRA SOLIDULA. *Mitr. testâ oblongo-ovatâ, crassâ, solidâ, spirâ brevi, obtusâ, prope apicem subtilissimè concentricè sulcatâ; anfractibus convexis, lævigatis, transversim exiliter striatis; olivaceo-fuscâ, plicis albis; columellâ concavo-expansâ, callositate albicante supernè armatâ, quadriplicatâ; labro peculiariter planulato, supernè canaliculato, intus crenulato.*

THE SOLID MITRE. Shell oblong-ovate, thick, solid, spire short, obtuse, very finely concentrically grooved near the apex; whorls convex, smooth, transversely faintly striated; olive-brown, plaits white; columella concavely expanded, armed with a white callosity at the upper part, four-plaited; lip peculiarly flattened, canaliculated at the upper part, crenulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Corrigidor, Bay of Manila (found under stones at low water); Cuming.

This is the first species of an interesting group of shells of which the *Mitra Ziervogeliana* forms the type, distinguished by their solid structure, the prominent developement of the columellar plaits, the presence of a callosity, and the peculiar flattened surface of the outer lip.

Species 134. (Mus. Deshayes, Paris.)

MITRA LIVIDA. *Mitr. testâ subquadrato-ovatâ, spirâ breviusculâ, acutâ; anfractibus lævigatis, longitudinaliter costatis, costis tumidis, infernè evanidis; livido-olivaceâ, balteo unico angusto cingulatâ, costis olivaceo-lutescentibus; columellâ quadriplicatâ; labro leviter sinuato; aperturæ fauce pallidè lividâ, striatâ.*

THE LIVID MITRE. Shell somewhat squarely ovate, spire rather short, acute; whorls smooth, longitudinally ribbed, ribs swollen, disappearing towards the lower part; livid olive colour, encircled with a single rather indistinct belt, ribs olive yellow; columella four-plaited; lip slightly sinuated; interior of the aperture pale livid olive, striated.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

I am much indebted to M. Deshayes for the loan of this very interesting species of which I know of no other specimens.

Species 135. (Mus. Cuming.)

MITRA CHOAVA. *Mitr. testâ ovatâ, solidâ, glabrâ, spirâ brevi; nigricante-fuscâ, plicis albis; columellâ concavâ, callositate armatâ, quadriplicatâ; labro peculiariter planulato, supernè canaliculato, intus crenulato.*

THE COFFEE-BERRY MITRE. Shell ovate, solid, smooth, spire short; blackish-brown, plaits white; columella concave, armed with a callosity, four-plaited; lip peculiarly flattened, canaliculated at the upper part, crenulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Isle of Johanna, Mozambique Channel; Hennah.

The characters of the *Mitra choava* are very similar to those of the *Mitræ solidula* and *anthracina*, each species may, however, be fully distinguished by its difference of form and other minor peculiarities.

Species 136. (Mus. Cuming.)

MITRA ZIERVOGELIANA. *Mitr. testâ ovatâ, solidâ, crassissimâ, ventricosâ, spirâ brevissimâ, acutâ, suturis crenato-crispis; anfractibus obliquè concentricè rugosis, basem versus transversim sulcatis, anfractu ultimo supernè tumido, infernè attenuato; fuscâ, plicis interstitiisque niveis; columellâ concaviusculâ, callositate albâ supernè armatâ, quadriplicatâ; labro peculiariter planulato, supernè sinuato, intus elevato-striato.*

ZIERVOGEL'S MITRE. Shell ovate, solid, very thick, ventricose, spire very short, acute, sutures crenately crisped; whorls obliquely concentrically wrinkled, transversely grooved towards the base, last whorl swollen at the upper part, attenuated at the lower; brown, plaits and interstices snowy-white; columella rather concave, armed at the uppermost part with a white callosity, four-plaited; lip peculiarly flattened, sinuated at the upper part, elevately striated within.

KIENER, Iconographie Coq. viv. p. 54. pl. 16. f. 52.

Voluta Ziervogeliana, Chemnitz.

Cancellaria Ziervogeliana, Lamarck.

Hab. Island of Corrigidor, Bay of Manila (found under stones at low water); Cuming.

This very remarkable shell, which Lamarck referred to the genus *Cancellaria*, is very properly placed by Kiener in the genus *Mitra*.

Species 137. (Mus. Cuming.)

MITRA ANTHRACINA. *Mitr. testâ acuminato-ovatâ, spirâ acutâ, glaberrimâ; anthracinâ; columellâ subconcavâ, quadriplicatâ, callositate parvâ, supernè armatâ; labro peculiariter planulato, supernè leviter canaliculato, intus crenulato.*

THE COAL-BLACK MITRE. Shell acuminately ovate, spire acute, very smooth; coal-black; columella slightly concave, four-plaited, armed with a small dark collosity at the upper part; lip peculiarly flattened, slightly canaliculated at the upper part, crenulated within.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

Very closely allied to the *Mitra solidula*, but of a more elongated form, with a smooth shining surface.

Species 138. (Mus. Norris.)

MITRA COLUMBELLÆFORMIS. *Mitr. testâ ovato-turbinatâ, crassâ, solidâ, spirâ brevi, acutâ; transversim impresso-striatâ; anfractibus supernè albis, infra olivaceo-brunneis, sparsim albimaculatis; columellâ sexplicatâ; labro incrassato, unicrenato.*

THE COLUMBELLA-SHAPED MITRE. Shell ovately turbinated, thick, solid, spire short, acute; transversely impressly striated; whorls white round the upper part, olive-brown below, spotted here and there with white; columella six-plaited; lip thickened crenated.

Variety β.

Testa omnino olivaceo-brunnea.

Shell entirely brown.

KIENER, Iconographie Coq. viv. p. 47. pl. 15. f. 46.

Hab. Madagascar; Kiener.

This species may be recognised by the crenated notch in the lip.

Species 139. (Mus. Cuming.)

MITRA WOLDEMARII. *Mitr. testâ ovato-oblongâ, crassiusculâ, spirâ brevi, acuminatâ, longitudinaliter subobsoletè concentricè plicatâ, transversim exiliter impresso-striatâ; olivaceo-fuscâ; columellâ quadriplicatâ, subconcavâ; labro planulato, supernè sinuato, intus crenulato-striato.*

WOLDEMAR'S MITRE. Shell ovately oblong, rather thick, spire short, acuminated, longitudinally rather obsoletely concentrically plicated, transversely faintly impressly striated; olive-brown, columella four-plaited, rather concave; lip flattened, sinuated at the upper part, crenulately striated within.

KIENER, Iconographie Coq. viv. p. 52. pl. 17. f. 55.

Hab. Island of Corrigidor, Bay of Manila (found under stones at low water); Cuming.

The characters of this species are very similar to those of the *Mitra solidula*, which is always of a darker colour and of a less acuminated form.

Species 140. (Mus. Norris.)

MITRA ROBUSTA. *Mitr. testâ ovatâ, crassâ, spirâ brevi, subobtusâ; anfractibus tumidiusculis, transversim sulcatis, basem versus præcipuè, longitudinaliter concentricè plicato-rugosis; rubido-fuscâ; columellâ concavâ, quadriplicatâ, callositate armatâ; labro incrassato, planulato, supernè canaliculato, intus crenulato.*

THE ROBUST MITRE. Shell ovate, thick, spire short, rather obtuse; whorls somewhat swollen, transversely grooved, especially towards the base, longitudinally concentrically plicately wrinkled; reddish brown; columella concave, four-plaited, armed with a callosity; lip thickened, flattened, canaliculated at the upper part; crenulated within.

REEVE, Pro. Zool. Soc. 1844.

Hab. ——?

This species partakes of the characters of the *Mitra Woldemarii* and *Ziervogeliana* in about equal proportions.

Species 141. (Mus. Cuming.)

MITRA FICULINA. *Mitr. testâ ovatâ, spirâ brevi, subobtuso-depressâ; anfractibus supernè rotundato-angulatis, transversim confertim elevato-striatis, longitudinaliter costatis, costis supernè tuberculato-incrassatis, inferné evanidis; rufo- seu nigricante-fuscâ; columella quadriplicatâ; aperturâ albâ.*

THE LITTLE FIG-LIKE MITRE. Shell ovate, spire short, rather obtusely depressed; whorls rotundately angulated at the upper part, transversely closely elevately striated, longitudinally ribbed, ribs tuberculately thickened at the upper part, disappearing gradually at the lower; reddish or blackish brown, columella four-plaited; aperture white.

LAMARCK, Anim. sans vert., vol. vii. p. 320.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

This shell is of a rich uniform reddish brown, with the form of the *Mitra patriarchalis*.

142

143

144

145

146 a

146 b

147

148

149

150

Sowerby del et lith.

prel. lith. Linnaeus

MITRA.

PLATE XIX.

Species 142. (Mus. Cuming.)

MITRA PULCHELLA. *Mitr. testâ acuminato-ovatâ, spirâ subturritâ, longitudinaliter costellatâ, costellis angustis, planis, confertiusculis, basem versus subgranosis, transversim impresso-striatâ; aurantio-lutescente, fasciâ purpurascente inter costas ornatâ; columellâ quinqueplicatâ.*

THE PRETTY MITRE. Shell acuminately ovate, spire somewhat turreted, longitudinally ribbed, ribs narrow, flat, rather close-set, slightly granulated towards the base, transversely impressly striated; orange yellow, ornamented with a purple band in the interstices between the ribs; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Barbadoes, West Indies; Humphreys.

The painting of this shell has a very pretty appearance.

Species 143. (Mus. Deshayes, Paris.)

MITRA DERMESTINA. *Mitr. testâ ovatâ, spirâ acuminatâ suturis subprofundis, longitudinaliter costellatâ, costellis planiusculis, confertis, basem versus subgranosis, transversim impresso-striatis; castaneo-nigricante et lutescente variâ, balteo albo unico angusto cingulatâ; columellâ quadriplicatâ.*

THE LEATHER-WORM MITRE. Shell ovate, spire acuminated, sutures rather deep, longitudinally ribbed, ribs rather flat, close-set, somewhat granulated towards the base, transversely impressly striated; chesnut-black variegated with light yellow, encircled with a single narrow white belt; columella four-plaited.

LAMARCK, Anim. sans vert., vol. vii. p. 323.

Hab. Island of Annaa (Pacific Ocean (found on the reefs at low water); Cuming.

A dark richly variegated species in which the ribs are flat and close set. Kiener considers the *Mitra pisolina* of Lamarck to be a brown variety of it.

Species 144. (Mus. Adamson.)

MITRA HISTRIO. *Mitr. testâ subovatâ, spirâ breviusculâ, longitudinaliter costatâ, costis subobtusis, basem versus granulosis, interstitiis transversim striatis; vividè coccineâ, suturis nigris, nigro interdum nebulosâ, balteo albo angusto, balteoque nigro, cingulatâ; columellâ quadriplicatâ.*

THE HARLEQUIN MITRA. Shell ovate, spire rather short, longitudinally ribbed, ribs rather obtuse, granulated towards the base, interstices transversely striated; bright scarlet, sutures black, sometimes clouded with black, encircled with a narrow black and a white belt; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

A gaily coloured scarlet shell more or less banded and bedaubed with black.

Species 145. (Mus. Cuming.)

MITRA COARCTATA. *Mitr. testâ ovatâ, crassâ, solidâ, gibbosiusculâ, basem versus leviter coarctatâ, spirâ abbreviato-acuminatâ, glabrâ, politâ, striis exiliter elevatis transversim cingulatâ; lutescente-albâ, ustulato-fusco nebulosâ et maculatâ; quadriplicatâ, plicis parvis; aperturâ angustâ; labro incrassato, medio coarctato.*

THE CONTRACTED MITRE. Shell ovate, thick, solid, rather gibbous, slightly contracted towards the base, spire shortly acuminated, smooth, polished, encircled with faintly raised striæ; yellowish white, clouded and spotted with burnt brown; four-plaited, plaits small; aperture narrow, lip thickened, contracted in the middle.

SWAINSON, MSS.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

A small polished brown-stained species approaching the *Mitra acuminata* in form.

Species 146. (Fig. *a* and *b*, Mus. Cuming.)

MITRA PATRIARCHALIS. *Mitr. testâ ovatâ, solidiusculâ, spirâ brevi, obtuso-rotundatâ; anfractibus supernè angulatis, ad angulum plicato-nodosis, transversim impresso-striatis, basem versus granosis; albâ aut lutescente-albâ, rufo vel nigricante-fusco zonatâ, nodis granisque albis; columellâ quadriplicatâ, plicâ superâ valdè maximâ.*

THE PATRIARCHAL MITRE. Shell ovate, rather solid, spire short, obtusely rounded, whorls angulated at the upper part, plicately noduled on the angle, transversely impressly striated, granulated towards the base; white or yellowish white, zoned with red or

blackish brown, nodules and granules white; columella four-plaited, uppermost plate very large.

LAMARCK, Anim. sans vert., vol. vii. p. 318.

Hab. Islands of Ticao and Luzon, Philippines (found on the reefs at low water); Cuming.

There appears to be two distinct varieties of this extremely interesting species, differently coloured according to the examples here represented.

Species 147. (Mus. Cuming.)

MITRA RUBRITINCTA. *Mitr. testâ oblongo-ovatâ, crassinsculâ, acutè acumiuatâ, transversim undiquè sulcatâ; albâ, maculis grandibus aurantio-rubris supra infraque seriatim nebuloso-tinctâ; columellâ quadriplicatâ; labro crenulato.*

THE RED-STAINED MITRE. Shell oblong ovate, rather thick, very sharply acuminated, transversely grooved throughout; white, stained in a clouded manner above and below with large orange-red spots in rows; columella four-plaited; lip crenulated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The surface of this shell is characteristically grooved throughout.

Species 148. (Mus. Cuming.)

MITRA SPECIOSA. *Mitr. testâ obeso-ovatâ, utrinque attenuatâ transversim impresso-striatâ, longitudinaliter costellatâ, costellis planiusculis, basem versus granulosis; rosaceo-albicante, costis fasciâ latissimâ fuscâ aut purpurascente-fuscâ tinctis, apice rosaceo; columellâ quadriplicatâ, plicâ superâ valdè maximâ.*

THE HANDSOME MITRA. Shell stoutly ovate, attenuated at both ends, transversely impressly striated longitudinally ribbed, ribs rather flat, granulated towards the base; pinkish white, ribs stained with a very broad brown or purple-brown band, apex pink; columella four-plaited, uppermost plate much the largest.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Capul, Philippines (found on the reefs); Cuming.

This shell, at a glance, has very much the appearance of the *Mitra pulchella*, but upon examination it will be observed that the dark band which encircles the one is painted on the ribs only, whilst in the other it appears in the interstices only.

Species 149. (Mus. Cuming.)

MITRA CAVEA. *Mitr. testâ ovatâ, glabrâ, longitudinaliter costellatâ, costellis obtusis; cinereo-nigricante, costis macularum albicantium serie unicâ ornatis; columellâ quadriplicatâ.*

THE BIRD-CAGE MITRE. Shell ovate, smooth, longitudinally ribbed, ribs obtuse; ashy black, ribs ornamented with a row of small white spots; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The specimen here figured from the collection of Tho. Norris, Esq., is the only example of the species I have seen.

Species 150. (Mus. Cuming.)

MITRA ADAMSONI. *Mitr. testâ ovatâ, subobesâ, spirâ breviusculâ, longitudinaliter granoso-plicatâ, transversim impresso-striatâ; albidâ, aut lutescente-albâ, maculis grandibus rubido-fuscis subirregulariter nebulosâ, lineâ albidâ unicâ cingulatâ; columellâ quadriplicatâ, labro subreflexo, crenulato; aperturæ fauce aurantiâ, columellâ labroque vividè aurantio-rubris.*

ADAMSON'S MITRE. Shell ovate, rather stout, spire rather short, longitudinally granulously plicated, transversely impressly striated; whitish or yellowish white, somewhat irregularly clouded with large reddish brown blotches, encircled with a single white line; columella four-plaited, lip a little reflected, crenulated; interior of the aperture orange-tinted, lip and columella bright orange-red.

GRAY, MSS. (Mr. Adamson's cabinet.)

Hab. Isle of Capul (found on the sands); Cuming.

I have much pleasure in adopting Mr. Gray's manuscript name for this new and very characteristic species.

151 a

150

151 b

152

153

154

155

156

157

158

Sowerby del. et lith.

MITRA.

PLATE XX.

Species 80. (Mus. Cuming.)

MITRA TELESCOPIUM. *Mitr. testâ ovato-fusiformi, lævigatâ, nitidâ, transversim punctato-striatâ; anfractibus contiguis, ultimo basem versus subcontracto, suturis conspicuis, profundis; cærulescente-albâ, anfractu ultimo infernè rufo-castaneo, spiræ apice nigricante; columellâ quadriplicatâ.*

THE TELESCOPE MITRE. Shell ovately fusiform, smooth, shining, transversely striated and punctured; whorls contiguous, the last somewhat contracted towards the base, sutures conspicuous, rather deep; blueish white, the whole of the lower portion of the last whorl dark reddish chesnut brown, apex of the spire blackish; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

This new and very characteristic shell exhibits the same peculiarly contracted structure as the *Mitra abbatis*, and the whorls have the same contiguous telescope-like appearance.

Species 151. (Fig. *a* and *b*, Mus. Cuming.)

MITRA EBENUS. *Mitr. testâ sublanceolato-ovatâ, lævigatâ, nitidâ, basi vix sulcatâ; nigerrimo-castaneâ, lineâ flavescente infra suturam cinctâ; columellâ quadriplicatâ.*

THE EBONY MITRE. Shell somewhat lanceolately ovate, smooth, shining, slightly grooved at the base; very dark chesnut brown, encircled beneath the suture with a yellowish line; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. x. p. 334.

Philippi, Enum. Moll. pl. 12. f. 8 and 10.

Variety β. Fig. 151 *b*.

Testa longitudinaliter plicata.

Shell longitudinally plicated.

Philippi, Enum. Moll. pl. 12. f. 9.

Varieties.

Voluta caffra, Delle Chiaje.

Mitra littoralis, Risso.

Hab. Mediterranean, (dredged by Professor E. Forbes and Capt. Graves, of H.M.S. Beacon, at various depths, ranging between twenty and eighty fathoms).

I have already noticed the curious analogy that exists between this shell and one which I have named *Mitra polita* (Sp. 94.), figured by a Mr. H. C. Küster, of Nürnberg, for the *Mitra subulata* of Lamarck. The Nürnberg periodical here referred to is fortunately but little known to conchologists, the letter-press being merely the reproduction of a mass of errors and confusion, whilst the plates are made up of figures copied partly from M. Kiener's 'Iconographie des Coquilles vivantes,' and partly from the 'Conchylien Cabinet,' including several very obscure figures of Martini's, published as long back as the year 1780.

Species 152. (Mus. Cuming.)

MITRA IGNOBILIS. *Mitr. testâ subobeso-fusiformi, basi leviter recurvâ, spirâ acuminatâ, transversim undique sulcatâ, sulcis confertis, subsuperficiariis; albicante, maculis grandibus ustulato-fuscis seriatim nebulosâ; columellâ sex-plicatâ, plicis infimis, subobscuris.*

THE IGNOBLE MITRE. Shell rather stoutly fusiform, slightly recurved at the base, spire acuminated, transversely grooved throughout, grooves close-set, rather superficial; whitish, clouded with rows of large burnt brown spots; columella six-plaited, lowest plaits somewhat obscure.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

In order not to confound this species with one of very similar appearance, the *Mitra ustulata* (Sp. 89.), it is important to notice that the surface of the former is grooved throughout, whilst that of the latter is very finely striated and marked with rather distant brown hair lines.

Species 153. (Mus. Cuming.)

MITRA LITERATA. *Mitr. testâ obeso-ovatâ, crassiusculâ, solidâ, subventricosâ, lævigatâ, aut subtilissimè punctato-striatâ, spirâ brevi, obtusâ; albicante, maculis rubido-fuscis undato-oblongis characteriformibus fasciatâ; columellâ quadriplicatâ.*

THE LETTERED MITRE. Shell stoutly ovate, rather thick, solid, somewhat ventricose, smooth or very finely striated with punctures, spire short, obtuse; whitish, banded with waved oblong character-like reddish-brown spots; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. x. p. 339.

Varieties.

Columbella Hebræa, Lamarck.

Columbella bizonalis, Lamarck.

Hab. Island of Guimaras (found under stones on the coral reefs at low water); Cuming.

It seems curious that Lamarck should have founded two species of *Columbella* with varieties of this shell, for in his descriptions he specifies the very character which excludes them from the genus; namely, "*columellâ quadriplicatâ.*"

Species 154. (Mus. Cuming.)

MITRA DECURTATA. *Mitr. testâ abbreviato-ovatâ, subventricosâ, crassâ, solidâ, spirâ brevi, apicem versus acutâ; lævigatâ, inferne sulcatâ; nigerrimo-fuscâ, punctis albidis perpaucis prope basem, lineâque albâ conspicuâ infra suturas cinctâ; columellâ quadriplicatâ; aperturâ amplâ; labro supernè sinuato et contracto.*

THE SHORTENED MITRE. Shell shortly ovate, somewhat ventricose, thick, solid, spire short, sharp towards the apex; smooth, grooved round the lower part; very dark blackish brown, encircled with a few white dots near the base, and a conspicuous white line beneath the sutures; columella four-plaited; aperture large; lip sinuated and contracted at the upper part.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

A fine new species of which I have seen several examples in an excellent state of preservation.

Species 155. (Mus. Cuming.)

MITRA TEXTURATA. *Mitr. testâ ovato-oblongâ, spirâ breviusculâ, acuminatâ, transversim crebricostatâ, costis longitudinaliter impresso-lineatis, interstitiis rugoso-cancellatis; albo ferrugineoque variegatâ; columellâ flavicante, quadriplicatâ.*

THE INTERWOVEN MITRE. Shell ovately oblong, spire rather short, acuminated, transversely closely ribbed, ribs longitudinally impressly lineated, interstices rugosely cancellated; variegated with white and rusty brown; columella yellowish, four-plaited.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. x. p. 328.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

A well-known species, quite distinct from any other of the genus.

Species 156. (Mus. Cuming.)

MITRA PLUMBEA. *Mitr. testâ acuminato-ovatâ, lævi, nitidâ, basi subobsoletè sulcatâ; cærulescente-plumbeâ, apicem versus fuscescente; columellâ quadriplicatâ, plicâ infimâ subindistinctâ; labro subeffuso.*

THE LEAD-COLOUR MITRE. Shell acuminately ovate, smooth, rather obsoletely grooved at the base; blueish lead colour, brown towards the apex; columella four-plaited, lowest plait rather indistinct; lip slightly effused.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. x. p. 339.

Hab. Mediterranean.

Several very characteristic examples of this species have been dredged by Professor Forbes at various depths in the Mediterranean.

Species 157. (Mus. Cuming.)

MITRA BADIA. *Mitr. testâ acuminato-ovatâ, transversim subtilissimè striatâ; undique badiâ; columella quadriplicatâ, plicâ infimâ subobscurâ; aperturâ breviusculâ.*

THE DARK BROWN MITRE. Shell acuminately ovate, transversely very finely striated; dark brown throughout; columella four-plaited, lowest plait somewhat obscure; aperture rather short.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This is rather an unsatisfactory species, though certainly not referable to any hitherto described.

Species 158. (Mus. Cuming.)

MITRA ACUMINATA. *Mitr. testâ ovato-oblongâ, crassiusculâ, solidâ, spirâ acutè acuminatâ, lævigatâ, anfractibus primis tenuissimè striatis; luteâ, epidermide tenui indutâ; columellâ quadriplicatâ; aperturâ albâ; labro incrassato, contracto, intus subgibboso.*

THE ACUMINATED MITRE. Shell ovately oblong, rather thick, solid, spire sharply acuminated, smooth, first few whorls very finely striated; yellow, covered with a slight epidermis; columella four-plaited; aperture white; lip thickened, contracted, rather gibbous interiorly.

SWAINSON, Zool. Illus., 2nd Series, pl. 128.

Mitra lutea, Quoy.

Hab. Isle of Annaa and Philippine Islands (found under stones at low water); Cuming.

Mr. Swainson described this shell under the above title long before its discovery by M. Quoy. In young specimens, such as that represented in the zoology of the 'Voyage de l'Astrolabe,' the spire is more delicately acuminated.

159

160

161

162

163

164

165

166

167

168

MITRA.

PLATE XXI.

Species 159. (Mus. Taylor.)

MITRA DEFRANCII. *Mitr. testâ lanceolato-ovatâ, spirâ subturritâ; anfractibus supernè leviter angulatis, longitudinaliter plicatis, plicis angustis, subcompressis, transversim striatis; cinnamomeo-nigricante, lineâ unicâ flavicante infra suturas cinctâ; columellâ triplicatâ.*

DEFRANCE'S MITRE. Shell lanceolately ovate, spire somewhat turreted; whorls slightly angulated at the upper part, longitudinally plaited, plaits narrow, rather compressed, transversely striated; cinnamon black, encircled with a single yellow line beneath the sutures; columella three-plaited.

PAYRANDEAU. Cat. Moll. de Corse, p. 166. pl. 8. f. 22. *Mitra ebenus, var.* δ, Philippi.

Hab. Mediterranean (Corsica, Sicily, &c.).

This species, though intimately allied to the plaited variety of the *Mitra ebenus*, may be always distinguished by its turriculated form, and by the more compressed structure of the plaits.

Species 160. (Mus. Taylor.)

MITRA CADAVEROSA. *Mitr. testâ ovato-turritâ, spirâ acutâ; anfractibus transversim impresso-striatis, supra et infra plus minusve angulatis, longitudinaliter costatis, costis ad angulos exasperato-mucronatis; albâ, balteo angusto fuscescente inter costas cingulatâ; columellâ quadriplicatâ; aperturæ fauce striatâ.*

THE GHASTLY MITRE. Shell ovately turreted, spire sharp; whorls transversely impressly striated, more or less strongly angulated above and beneath, longitudinally ribbed, ribs sharp-pointed upon the angles; white, encircled with a narrow pale brown belt in the interstices between the ribs; columella four-plaited; interior of the aperture striated.

REEVE, Pro. Zool. Soc., 1844.

Hab. Philippine and Lord Hood's Islands (found under stones at low water); Cuming.

However closely this shell may approximate to the *Mitra exasperata* it is uniformly white, and always exhibits a strong peculiarity in the band which appears in the interstices and not upon the summit of the ribs.

Species 161. (Mus. Taylor.)

MITRA ARENOSA. *Mitr. testâ ovato-turritâ, spirâ acutâ; anfractibus transversim impresso-striatis, longitudinaliter multiliratis, liris parvis, confertis, subgranosis; albidâ, cinereo-cærulescente fasciatâ, liris interdum nigricantibus aut nigricante-punctatis; columellâ quadriplicatâ; aperturæ fauce striatâ.*

THE SANDY MITRE. Shell ovately turreted, spire sharp; whorls transversely impressly striated, longitudinally many-ridged, ridges small, close-set, slightly granulated; whitish, banded with ashy blue, ridges sometimes blackish or black-dotted; columella four-plaited; interior of the aperture striated.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. x. p. 338. *Mitra torulosa* (*pars*), Kiener.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

M. Kiener regards this species as a variety of the following, but I do not think it expedient to follow his opinion. One half of the established species may be dispensed with were every one of two that approximate abandoned upon the discovery of their intermediate link.

Species 162. (Mus. Cuming.)

MITRA EXASPERATA. *Mitr. testâ ovato-turritâ, spirâ acutâ; anfractibus decussatim impresso-striatis, supernè angulatis, longitudinaliter costatis, costis ad angulum subcompressis, exasperato-mucronatis; albidâ, cinereo-cærulescente fasciatâ; columellâ quadriplicatâ; aperturæ fauce striatâ.*

THE SHARP-POINTED MITRE. Shell ovately turreted, spire sharp; whorls decussately impressly striated, angulated round the upper part, longitudinally ribbed, ribs a little compressed and sharp-pointed at the angle; whitish, banded with ashy blue; columella four-plaited; interior of the aperture striated.

Voluta exasperata, Chemnitz, Conch. Cab., vol. x. p. 172. pl. 151. f. 1440 and 1441.

Mitra torulosa, Lamarck.

Voluta corrugata, Wood.

Hab. Java and the Philippine Islands (found abundantly at Ticao under stones at low water); Cuming.

Chemnitz's *Volutæ cruentata* and *exasperata*, figured in Pl. 151. vol. x. of the 'Conchylien Cabinet,' seem to have quite escaped the attention of Lamarck and his followers, the former having been described under the new name of *Mitra harpæformis*, the latter under that of *Mitra torulosa*.

Species 163. (Fig. Swainson.)

MITRA CARINATA. *Mitr. testâ fusiformi, spirâ turritâ; anfractibus, supernè subangulatis, supra transversim impresso-striatis, infra lævibus; olivaceo-fuscâ; columellâ quadriplicatâ.*

THE KEELED MITRE. Shell fusiform, spire turreted; whorls slightly angulated at the upper part, encircled upon the angle with a single keel-like ridge, transversely impressly striated above, smooth below, olive-brown; columella four-plaited.

SWAINSON, Zoological Illustrations, 2nd Series.

Hab. Sierra Leone; Mawe.

Very nearly allied to the *Mitra Senegalensis* (Sp. 129.), but forms a decided keel round the upper part of each whorl.

Species 164. (Mus. Cuming.)

MITRA CARNICOLOR. *Mitr. testâ subabbreviato-fusiformi, liris parvis subobtusis, alternis majoribus, undique cingulatâ, liris striis impressis longitudinaliter incisis; extus pallidè carneolo-fuscescente, intus rosaceâ; columellâ quinqueplicatâ, plicâ infimâ subobscurâ.*

THE FLESH-COLOURED MITRE. Shell somewhat abbreviately fusiform, encircled with small rather obtuse ridges, the alternate of which are the larger, ridges longitudinally carved with impressed striæ; pale fleshy brown without, pink within; columella five-plaited, lowest plait rather obscure.

REEVE, Pro. Zool. Soc., 1844.

Hab, ——?

A neatly sculptured delicately tinted shell, quite distinct from any hitherto described species.

Species 165. (Mus. Belcher,)

MITRA HINDSII. *Mitr. testâ lanceolato-fusiformi, spirâ acutissimè turritâ; anfractibus supernè angulatis, infra angulum leviter contractis, transversim carinato-costatis, costâ super angulum prominentiore, interstitiis concavis, subtilissimè elevato-striatis; lutescente, costis spadiceis, epidermide tenui indutâ; columellâ quadriplicatâ, plicis duabus inferioribus ferè obsoletis; aperturæ fauce subrosaceâ.*

HIND'S MITRE. Shell lanceolately fusiform, spire very sharply turreted; whorls angulated at the upper part, slightly contracted beneath the angle, transversely carinately ribbed, rib upon the angle more prominent than the rest, interstices concave, very finely elevately striated; yellowish, ribs pale brown, covered with a thin epidermis; columella four-plaited, the two lower plaits almost obsolete; interior of the aperture tinged with pink.

REEVE, Pro. Zool. Soc., 1844.

Hab. Gulf of Nicoya (found in mud at the depth of about seventeen fathoms); Hinds.

This beautiful species which I have the pleasure of dedicating to a most zealous labourer in the field of conchological research, may be recognised by its graceful form and by the keel-like elevation of the ribs.

Species 166. (Mus. Cuming.)

MITRA LATRUNCULARIA. *Mitr. testâ abbreviato-fusiformi, tenuiculâ, basi truncatâ; transversim undique sulcatâ, sulcis angustis, crebris, punctatis; albidâ, rubido-cutaneo tessellatâ et fasciatâ; columellâ quadriplicatâ.*

THE CHESS-BOARD MITRE. Shell shortly fusiform, rather thin, truncated at the base; transversely grooved throughout, grooves narrow, close set, punctured; whitish, thickly tessellated and banded with reddish chesnut-brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

A slight thin shell closely grooved throughout, the grooves being minutely punctured, and the intermediate ridges prettily tessellated with white and reddish brown.

Species 167. (Mus. Cuming.)

MITRA SCHROETERI. *Mitr. testâ abbreviato-fusiformi, tenuiculâ, quasi corneâ, basi truncatâ, vix emarginatâ, lævigatâ; corneo-fuscescente, juxta suturas fusco maculatâ, anfractu ultimo maculis albidis perpaucis in medio subindistinctè fasciato; columellâ quadriplicatâ.*

SCHROETER'S MITRE. Shell shortly fusiform, rather thin, as if horny, truncated at the base, scarcely emarginated, smooth; pale horny brown, spotted with brown next the sutures, last whorl indistinctly banded with a very few white spots; columella four-plaited.

DESHAYES, Anim. sans vert. (note), vol. x. p. 323.

Voluta cornicula Schröeteri, Chemnitz.

Mitra cornicularis, Lamarck.

Hab. ——?

To Chemnitz and to M. Deshayes are we indebted for having dissipated the confusion occasioned by Schröeter mistaking this species for the *Voluta cornicula* of Linnæus.

Species 168. (Fig. Swainson.)

MITRA PUNCTATA. *Mitr. testâ ovatâ, crassiusculâ, spirâ brevi, subconicâ; transversim punctato-striatâ; olivaceo-fuscâ; columellâ sex-plicatâ; labro crenulato.*

THE PUNCTURED MITRE. Shell ovate, rather thick, spire short, somewhat conical, transversely striated and punctured; olive-brown; columella six-plaited; lip crenulated.

SWAINSON, Zoological Illustrations, 2nd Series.

Hab. ——?

Mr. Swainson has given so accurate an account of this shell that I have ventured to give a copy of his figure.

169

170

171

172

173 a

173 b

174

175

176

177

Sowerby del. et lith.:

prel: lith: Linn: imp.

MITRA.

PLATE XXII.

Species 169. (Mus. Taylor.)

MITRA RIGIDA. *Mitr. testâ fusiformi-turritâ, spirâ acutâ, suturis subprofundis; anfractibus infra suturas subangulatis, longitudinaliter costatis, costis parvis, compressiusculis, plus minusve distantibus; cinereo-viridescente, costis maculis parvis purpureo-sanguineis seriatim ornatis; columellâ quadriplicatâ; aperturæ fauce nigricante-fuscâ.*

THE RIGID MITRE. Shell fusiformly turreted, spire acute, sutures rather deep; whorls a little angulated beneath the sutures, longitudinally ribbed, ribs small, somewhat compressed, more or less distant; ashy-green, ribs ornamented with rows of purple-red spots: columella four-plaited; interior of the aperture blackish brown.

SWAINSON, Zool. Illustrations, 1st Series, pl. 29.

Hab. ——?

This is an exceedingly variable species, but perfectly distinct in all its variations from the *Mitra semifasciata* with which it is confounded by M. Kiener.

Species 170. (Mus. Norris.)

MITRA DESHAYSII. *Mitr. testâ subfusiformi, spirâ turritâ, anfractibus supernè angulatis, ad angulum nodosis, infra lævibus; livido-viridescente, nodis aurantio-coccineis, strigis in medio interruptis e nodis descendentibus; columellâ quadriplicatâ.*

DESHAYES' MITRE. Shell somewhat fusiform, spire turreted, whorls angulated at the upper part, noduled on the angle, smooth beneath; livid green, nodules orange-scarlet, with streaks of the same colour, interrupted in the middle, running down from the nodules; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab, ——?

I have two examples of this extremely interesting species from the collection of M. Deshayes, and two from that of Thomas Norris, Esq.

Species 171. (Mus. Norris.)

MITRA PRUINOSA. *Mitr. testâ ovato-fusiformi, spirâ acuminatâ, lineis impressis longitudinalibus et transversis decussatim exsculptis; spadiceo-fuscescente, strigis niveis brevibus angustis e suturis subirregulariter descendentibus; columellâ quadriplicatâ.*

THE FROSTY MITRE. Shell ovately fusiform, spire acuminated, decussately engraved with longitudinal and transverse impressed lines; pale brown, with short narrow snow-like streaks rather irregularly descending or striking out from the sutures; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This is another peculiarly characteristic species for which I have no locality.

Species 172. (Mus. Cuming.)

MITRA SOLANDRI. *Mitr. testâ ovato-oblongâ, crassiusculâ, spirâ elevatâ, apice subobtuso; undique sulcatâ, sulcis latiusculis, confertis, peculiariter subtilissimè corrugatis, liris intermediis angustis, carinæformibus; pallidè fusco alboque fasciatâ; columellâ quadriplicatâ.*

SOLANDER'S MITRE. Shell ovately oblong, rather thick, spire elevated, apex rather obtuse; grooved throughout, grooves rather broad and close-set, peculiarly very finely wrinkled, intermediate ridges narrow, keel-like; banded with white and pale brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

An ancient species described many years since in manuscript by Dr. Solander under a name that is occupied.

Species 173. (Mus. Cuming.)

MITRA FLAMMIGERA. *Mitr. testâ fusiformi, spirâ acutè acuminatâ, suturis impressis; anfractibus supernè tumidiusculis, transversim undique liratis, liris alternis majoribus, interstitiis lineis impressis decussatis; albidâ, flammis latiusculis spadiceis longitudinalibus pictâ; columellâ quinqueplicatâ.*

THE FLAMING MITRE. Shell fusiform, spire sharply acuminated, sutures impressed; whorls rather swollen round the upper part, transversely ridged throughout, alternate ridges larger, interstices crossed with impressed lines; whitish, painted with rather broad longitudinal pale brown flames; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

The sculpture of this attractive species approaches very nearly to that of the *Mitra interlirata* from which it differs more materially in form.

Species 174. (Mus. Metcalfe.)

MITRA LORICATA. *Mitr. testâ fusiformi, utrinque attenuatâ, spiræ anfractibus plano-convexis; fortiter nodulosogranosis, granis regularibus, seriatim creberrimè digestis; albidâ, maculis perpaucis aurantio-fuscescentibus hic illic fasciatim tinctâ; columellâ quinqueplicatâ.*

THE MAILED MITRE. Shell fusiform, attenuated at both ends, whorls of the spire flatly convex; strongly nodulously granuled, granules regular, close-set in rows; whitish, stained here and there with a very few light orange-brown spots in bands; columella five-plaited.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

The entire surface of this species, from the collection of W. Metcalfe, Esq., is very strongly closely granulated.

Species 175. (Mus. Taylor.)

MITRA MACULOSA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, suturis impressis; anfractibus transversim punctato-striatis, parte superiori lutescente-albâ fuscescente partim tinctâ, infra castaneo-fuscâ albipunctatâ; columellâ quinqueplicatâ; labro intùs supernè sinuato.*

THE SPECKLED MITRE. Shell oblong-ovate, spire rather short, sutures impressed; whorls transversely striated and punctured, upper part yellowish white, partially stained with brown, beneath chesnut brown speckled with white dots; columella five-plaited; lip sinuated interiorly at the upper part.

REEVE, Pro. Zool. Soc., 1844.
Hab. Australia; and Island of Annaa, Pacific Ocean (found at the latter place on the reefs); Cuming.

This species may be recognised by its peculiarity of colouring, the upper portion of the whorls being nearly white, stained just here and there with brown, the lower chesnut-brown speckled with white dots.

Species 176. (Mus. Taylor.)

MITRA SULCATA. *Mitr. testâ acuminato-ovatâ, spirâ breviusculâ, acutâ; anfractibus supernè vix angulatis, costis carinæformibus elevatis subdistantibus undique regulariter cinctis, sulcis interstitialibus concavis; fuscescente, epidermide nigricante-fuscâ indutâ; columellâ quadriplicatâ.*

THE GROOVED MITRE. Shell acuminately ovate, spire rather short, sharp-pointed; whorls very slightly angulated at the upper part, encircled with particular regularity throughout by rather distant elevated keel-like ribs, interstitial grooves concave; light brown, covered with a very dark brown epidermis.

KIENER, Iconographie Coq. viv., p. 45.
Tiara sulcata, Swainson, Zool. Illus., 2nd Series.
Hab. Mouth of the river Chiriqui, Province of Veragua, West Columbia (found in fine black sand at the depth of four fathoms); Cuming.

Figured by M. M. Kiener and Küster with ingenuous fidelity from Swainson's *magnified* representation in the 'Zoological Illustrations.'

Species 177. (Mus. Cuming.)

MITRA PROSCISSA. *Mitr. testâ oblongo-ovatâ, utrinque attenuatâ, spiræ anfractibus contiguis, suturis impressis; transversim undique liratis, liris latiusculis, obtuso-convexis, confertis, interstitiis angustis, subtilissimè cancellatis; albidâ, maculis aurantio-fuscescentibus bifasciatim tinctâ.*

THE PLOUGHED MITRE. Shell oblong ovate, attenuated at both ends; whorls of the spire contiguous, sutures impressed; transversely ridged throughout, ridges rather broad, obtusely convex, close-set, interstices narrow, very finely cancellated; whitish, stained with two bands of light orange-brown spots.

REEVE, Pro. Zool. Soc., 1844.
Hab. ——?

It may be as well to caution the reader against confounding this shell with the *Mitra ferruginea* (Sp. 28.), a name which I have seen erroneously attached to it in one or two important collections.

178

179

180 a

180 b

181

182 a

182 b

183 a

183 b

184

LIBRARY OF THE BOMBAY BRANCH OF THE ASIATIC SOCIETY

Sowerby del et lith.

prel: lith: Linn: imp.

MITRA.

PLATE XXIII.

Species 178. (Mus. Cuming.)

MITRA ROTUNDILIRATA. *Mitr. testâ oblongo-ovatâ, utrinque attenuatâ, transversim undique lirata, liris rotundis, confertis, interstitiis angustis, striis elevatis decussatis; aurantio-castaneâ; columellâ quadriplicatâ.*

THE ROUND-RIDGED MITRE. Shell oblong ovate attenuated at both ends, transversely ridged throughout, ridges round, close set, interstices crossed with narrow raised striæ; orange-chesnut; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

The ridges of this shell are peculiarly rounded, and impart a kind of crimped appearance to the lip.

Species 179. (Mus. Cuming.)

MITRA RUPPELLII. *Mitr. testâ fusiformi-ovatâ, basem versus leviter contractâ, transversim undique liratâ, liris subrotundis, interstitiis lævibus; castaneo-fuscâ; columellâ quadriplicatâ.*

RUPPELL'S MITRE. Shell fusiformly ovate, slightly contracted towards the base, transversely ridged throughout, ridges somewhat rounded, interstices smooth, chesnut-brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Red Sea; Rüppell.

An interesting species in which the ridges are almost as rounded as in the former, they are however wider apart and the interstices are not crossed with raised striæ.

Species 180. (Fig. *a*, Mus. Cuming; Fig. *b*, Mus. Graham.)

MITRA LIMBIFERA. *Mitr. testâ ovato-fusiformi, spirâ subacuminatâ, suturis impressis; lævigatâ aut exiliter sulcatâ, basem versus præcipuè; anfractuum parte superiori albidâ aut lutescente, infra aurantio-fuseâ; columellâ quadriplicatâ.*

THE BORDERED MITRE. Shell ovately fusiform, spire somewhat acuminated, sutures impressed; smooth, or faintly grooved, especially towards the base; upper part of the whorls whitish or yellowish, orange-brown beneath; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 329.

Hab. Philippine Islands; Cuming.

Martini's old figure, Conch. Cab. vol. 4. pl. 150. f. 1393, quoted by Lamarck with doubt for the illustration of this species, seems to apply better to his *Mitra aurantiaca* which differs from the *Mitra limbifera* in being strongly grooved throughout, and more contracted at the base.

Species 181. (Mus. Cuming.)

MITRA TICAONICA. *Mitr. testâ ovatâ, crassâ, solidâ, spirâ brevi, suturis profundis; anfractibus transversim undique exiliter sulcatis, juxta suturas lævisculis; spadiceo-brunneâ aperturæ fauce vividè purpureo-fuscâ; columellâ quadriplicatâ.*

THE TICAO MITRE. Shell ovate, thick, solid, spire short, sutures deep; whorls transversely faintly grooved throughout, rather smooth next the sutures; bay brown, interior of the aperture bright purple brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

A very characteristic species with a dark purple-brown richly enamelled mouth.

Species 182. (Fig. *a*, Mus. Taylor; Fig. *b*, Mus. Cuming.)

MITRA AURANTIA. *Mitr. testâ ovatâ, basi peculiariter contractâ, spirâ breviusculâ, suturis profundis; transversim undique fortiter sulcatâ, sulcis nunc angustis, numerosis, nunc latioribus, paucioribus; vividè aurantiâ, anfractuum parte superiori fasciâ albâ cingulatâ; columellâ quadriplicatâ; labro crenulato.*

THE ORANGE MITRE. Shell ovate, peculiarly contracted at the base, spire rather short, sutures deep; transversely strongly grooved throughout, grooves sometimes narrow and numerous, sometimes wider and fewer; bright orange, upper part of the whorls encircled by a white band; columella four-plaited; lip crenulated.

DESHAYES, Anim. sans vert. (note), vol. x. p. 330; Guerin's Mag. de Zool. 1831, pl. 6.

Voluta aurantia, Gmelin.

Mitra aurantiaca, Lamarck (not of Kiener).

Mitra Peronii, Lamarck, Kiener.

Hab. New Zealand; Quoy, Deshayes. Island of Burias, Philippines (found under stones on the reefs at low water); Cuming.

The best illustration hitherto published of the *Mitra aurantia* is that by M. Deshayes, in the 'Magasin de Zoologie,' 1831. Kiener has figured an example of the following species for it, and Küster has given an innocent repetition of the error. I think with M. Deshayes that Lamarck's *Mitra Peronii* is merely a 'double emploi' of this species.

Species 183. (Mus. Cuming.)

MITRA VEXILLUM. *Mitr. testâ ovatâ, basem versus peculiariter attenuatâ, spirâ breviusculâ, apice obtusâ, suturis subrudis, profundis; lævigatâ, nitidâ, basi sulcatâ; vividè rufescente-aurantiâ, lineis nigricante-fuscis conspicuis undique regulariter cinctâ; columellâ quadriplicatâ.*

THE FLAG MITRE. Shell ovate, peculiarly attenuated towards the base, spire rather short, obtuse at the apex, sutures somewhat rude, deep, smooth, shining; grooved at the base, bright reddish orange, regularly encircled throughout with conspicuous blackish brown lines; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Mitra aurantiaca, Kiener, Küster, (not of Lamarck).

Hab. Philippine Islands; Cuming.

An extremely interesting species of a dark reddish orange colour, ruled, as it were, from top to bottom with conspicuous dark lines.

Species 184. (Mus. Norris.)

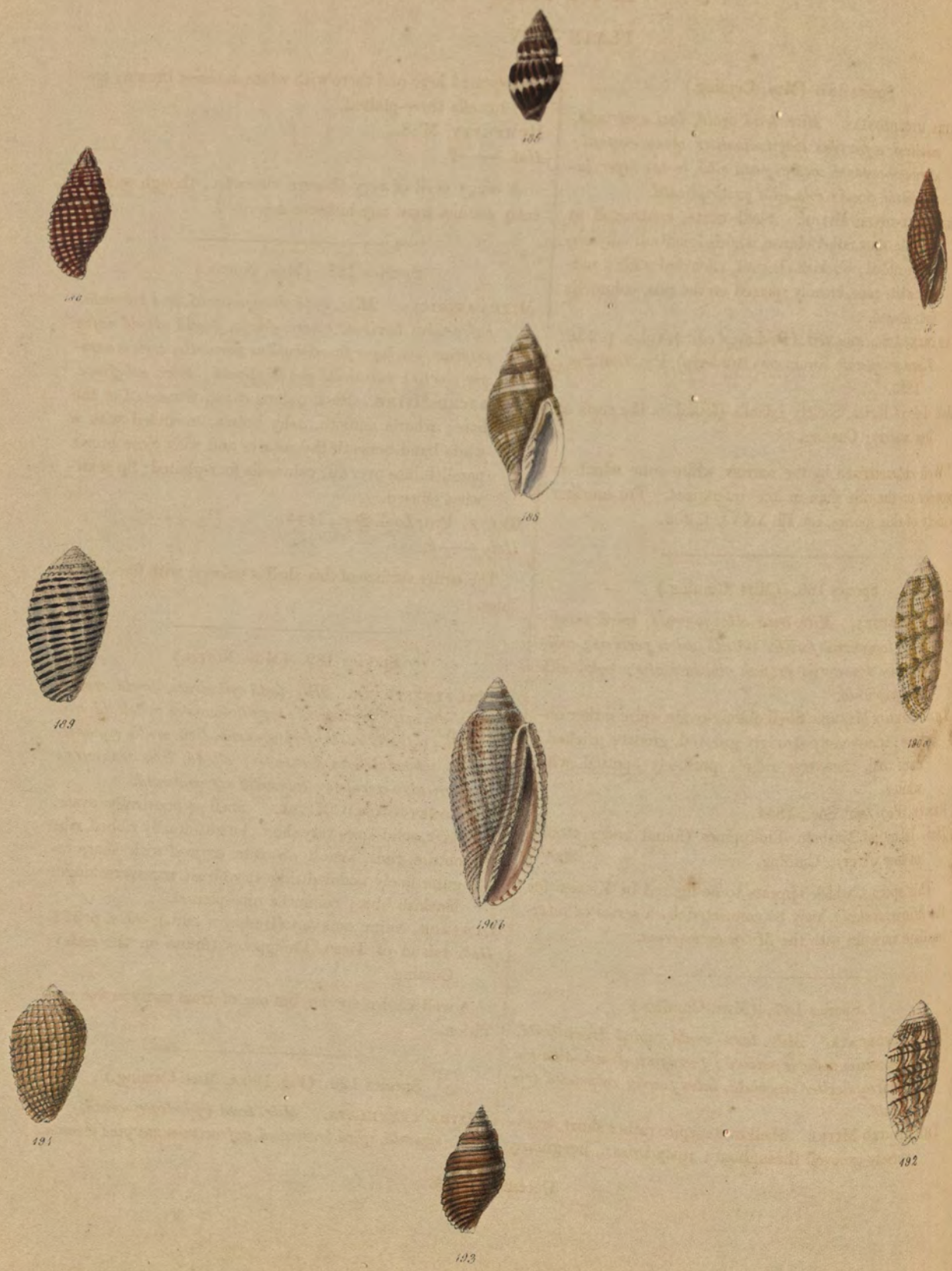
MITRA PLANILIRATA. *Mitr. testâ oblongo-ovatâ, spirâ subacuminatâ, transversim undique sulcatâ, liris intermediis peculiariter plannlatis; fuscâ; columellâ quadriplicatâ.*

THE FLAT-RIDGED MITRE. Shell oblong ovate, spire a little acuminated, transversely grooved throughout, intermediate ridges peculiarly flattened; brown, columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This species may be easily distinguished from those which it so nearly resembles in general appearance, by its peculiarly flattened ridges.



Sowerby del et lith.

prel lith Linn imp

MITRA.

PLATE XXIV.

Species 185. (Mus. Cuming.)

MITRA MICROZONIAS. *Mitr. testâ ovatâ, basi contractâ, subobtusâ, anfractibus longitudinaliter obtuso-costatâ; nigricante-castaneâ, zonâ angustâ albâ, costas super latimaculatâ, cinctâ; columellâ quadriplicatâ.*

THE SMALL-ZONED MITRE. Shell ovate, contracted at the base, spire rather obtuse, whorls longitudinally obtusely ribbed; blackish chesnut, encircled with a narrow white zone, broadly spotted on the ribs, columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 336. *Tiara semiplicata*, Swainson (Broderip), Pro. Zool. Soc. 1835.

Hab. Isle of Rietea, Society Islands (found on the reefs at low water); Cuming.

Well characterized by the narrow white zone which is broader on the ribs than in the interstices. For another variety of this species, see Pl. XXVI. f. 202.

Species 186. (Mus. Cuming.)

MITRA PEREGRA. *Mitr. testâ oblongo-ovatâ, spirâ subobtusâ; transversim fortiter sulcatâ, sulcis pertusis; rubidâ, liris transversis profusè albimaculatis; columellâ quinqueplicatâ.*

THE FOREIGN MITRE. Shell oblong-ovate, spire rather obtuse; transversely strongly grooved, grooves pricked; dark red, transverse ridges profusely spotted with white.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

This species, which appears to be figured by Kiener for the *Mitra nucleola*, may be connected by a series of intermediate varieties with the *Mitra cucumerina*.

Species 187. (Mus. Cuming.)

MITRA PORCATA. *Mitr. testâ ovatâ, spirâ breviusculâ, transversim undique sulcatâ; ferrugineo-fuscâ, albo hic illic irregulariter maculatâ, intus fuscâ; columellâ triplicatâ.*

THE RIDGED MITRE. Shell ovate, spire rather short, transversely grooved throughout; rusty brown, irregularly spotted here and there with white, interior brown; columella three-plaited.

HUMPHREY, MSS.

Hab. ——?

A dingy shell of very obscure character, though sufficiently distinct from any hitherto described.

Species 188. (Mus. Norris.)

MITRA ASTRICTA. *Mitr. testâ oblongo-ovatâ, basi truncatâ; anfractibus lævibus, cinereo-fuscis, fasciâ albidâ infra suturam, lineisque fuscescentibus paralellis crebris undique cinctis; columellâ quadriplicatâ; labro subeffuso.*

THE LACED MITRE. Shell oblong-ovate, truncated at the base; whorls smooth, ashy brown, encircled with a white band beneath the sutures and with close brown parallel lines over all; columella four-plaited; lip somewhat effused.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

The entire surface of this shell is enlaced with fine brown lines.

Species 189. (Mus. Norris.)

MITRA FENESTRATA. *Mitr. testâ cylindraceo-ovatâ, crassâ, solidâ, spirâ brevissimâ; longitudinaliter costellatâ, costellis obtusis, rudis, ferè obsoletis, liris acutis regularibus subnoduliferis decussatis; albidâ, liris transversis nigricante-cæruleis; columellâ novemplicatâ.*

THE HONEYCOMBED MITRE. Shell cylindrically ovate, thick, solid, spire very short; longitudinally ribbed, ribs obtuse, rude, almost obsolete, crossed with sharp regular finely noduled ridges; whitish, transverse ridges blackish blue; columella nine-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 328.

Hab. Island of Ticao, Philippines (found on the reefs); Cuming.

A well known species, but one of great rarity in fine condition.

Species 190. (Fig. 190 *a*, Mus. Cuming.)

MITRA CRENULATA. *Mitr. testâ cylindraceo-ovatâ, crassiusculâ, spirâ brevissimâ, anfractuum margine crenula-*

to; lineis impressis longitudinalibus et transversis decussatâ; albâ, aurantio-fuscescente undato-nebulatâ; columellâ octoplicatâ, intus albâ.

THE CRENULATED MITRE. Shell cylindrically ovate, rather thick, spire very short, edge of the whorls crenulated; decussated with longitudinal and transverse impressed lines; white, clouded in a waved manner with light orange brown; columella eight-plaited, interior white.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 328. *Voluta crenulata*, Chemnitz.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The entire surface of this species is simply decussated with impressed lines, and the painting is clouded in a characteristic waved manner from the crenulated summit of the whorls to the base.

Species 191. (Fig. 190 *b*, Mus. Lady Finch.)

MITRA SINENSIS. *Mitr. testâ cylindraceo-oblongâ, crassâ, spirâ brevissimâ, acutâ; transversim crebriliratâ, liris angustis, prominentibus, granosis, lineisque longitudinalibus impressis exilibus decussatâ; fuscâ; columellâ decemplicatâ, callositate conspicuâ supernè armatâ; intus fuscâ, nitidè encausticâ.*

THE CHINESE MITRE. Shell cylindrically oblong, thick, spire very short, sharp; transversely closely ridged, ridges narrow, prominent, granose, decussated with faintly impressed lines; brown; columella ten-plaited, armed at the top with a conspicuous callosity; interior brown, brightly enamelled.

REEVE, Pro. Zool. Soc., 1844.

Mitra crenulata (pars), Kiener, Icon., f. 105*a*.

Hab. Coast of China.

This fine species, though one of great rarity, has been probably confounded hitherto with the *Mitra crenulata*, an error into which I had myself fallen, as the irregularity of the figures of reference show, until the arrival of a magnificent specimen most liberally forwarded to me for inspection by Mr. Grüner of Bremen. The accompanying figure being already engraved from a smaller specimen in the collection of Lady Finch, for the drawing of which I am indebted to the kindness of Mr. Sowerby, Mr. Grüner's shell has not served me for illustration; for description it has been invaluable as the means of establishing a new and very important species. It differs entirely from the *Mitra crenulata*, independent of colouring and size, in the character of its sculpture, whilst the columella has an additional number of plaits, and is armed with a remarkable callosity at the summit.

Species 192. (Fig. 191, Mus. Cuming.)

MITRA GLANS. *Mitr. testâ ovatâ, subcylindraceâ, superè obesâ, crassâ, solidâ, spirâ brevissimâ, partim occultâ; longitudinaliter obtuso-costellatâ, costellis fortiter granulosis; viridè aurantio-fuscâ, granulis albidis, intus albâ; columellâ octoplicatâ.*

THE ACORN MITRE. Shell ovate, somewhat cylindrical, stout round the upper part, thick, solid, spire very short, partially hidden, longitudinally obtusely ribbed, ribs strongly granulated; bright orange brown, granules whitish, interior white; columella eight-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found on the reefs at low water); Cuming.

Characterized by its very distinctly granulated sculpture, and by its short obese form.

Species 193. (Fig. 192, Mus. Norris.)

MITRA UNDULOSA. *Mitr. testâ cylindraceo-ovatâ, crassâ, spirâ brevissimâ; lævisculâ, lineis exiliter impressis undique cinctâ; albâ, lineis fuscis cingulatâ, undulisque fuscis angustis longitudinalibus variegatâ; columellâ octoplicatâ.*

THE FESTOONED MITRE. Shell cylindrically ovate, thick, spire very short; rather smooth, encircled throughout with faintly impressed lines; white, encircled with fine brown lines, and variegated with narrow brown longitudinal waves; columella eight-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines, (found among coral sand on the reefs at low water); Cuming.

The lineated character of the painting is so different from that of the *M. crenulata*, that I cannot refrain from separating it as a distinct species.

Species 194. (Fig. 193, Mus. Cuming.)

MITRA NANUS. *Mitr. testâ abbreviato-ovatâ, spirâ brevi, acutâ, transversim undique sulcatâ, sulcis basem versus profundioribus; rubido-fuscâ, balteo angusto flavicante, peculiariter albimaculatâ, cinctâ; columellâ quadriplicatâ.*

THE DWARF MITRE. Shell shortly ovate, spire short, sharp, transversely grooved throughout, grooves deeper towards the base; reddish brown, encircled with a narrow peculiarly white-spotted yellow belt; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

Distinguished by its narrow yellow belt which has a peculiar white knotted appearance.

194

195

196a

196 b

197 a

197b

198

199

200

201

Sowerby del et lith.

prel lith. Lin...

MITRA.

PLATE XXV.

Fig. 194. (Mus. Taylor.)—Front view of the *Mitra maculosa*, Sp. 178, figured, but not named, in Martini Conch. Cab., vol. iv. pl. 150. f. 1400.

Species 195. (Mus. Cuming.)

MITRA PORPHYRETICA. *Mitr. testâ obeso-ovatâ, basi subgranosâ, spirâ acutè turritâ; longitudinaliter plicato-costatâ, costis angulatis; anfractibus supra albicantibus, infra olivaceo-cinereis, albizonulatis; columellâ quadriplicatâ; aperturâ brevi.*

THE PORPHYRY MITRE. Shell stoutly ovate, somewhat granose at the base, spire sharply turreted; longitudinally plicately ribbed, ribs angular; whorls white above, olive ash-colour beneath, encircled with small white zones; columella four-plaited; aperture short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

A short stout species with a sharp angularly turreted spire, encircled with bands of a peculiarly livid olive ash colour.

Species 196. (Fig. 196 *a*, Mus. Cuming; Fig. 196 *b*, Mus. Norris.)

MITRA NODOSA. *Mitr. testâ obeso-ovatâ, spirâ angulato-turritâ; anfractibus undique fortiter tuberculatis, supra transversim impresso-striatis, infra lævibus; albidâ, interdum livido-cærulescente aurantioque zonulatâ; columellâ quadriplicatâ, plicâ supremâ maximâ; aperturâ brevi, pallidè aurantiâ.*

THE NODOSE MITRE. Shell stoutly ovate, spire angularly turreted; whorls everywhere strongly tuberculated, transversely impressly striated above, smooth beneath; whitish, sometimes encircled with livid blue and orange zones; columella four-plaited, the uppermost plait very large; aperture short, palely tinged with orange.

Tiara nodosa, Swainson, Philosophical Magazine.

Mitra fraga, deinde *tuberculata*, Kiener.

Mitra Cancellarioides, Anton.

Hab. China, Philippine Islands, and Lord Hood's Island (found under stones and under coral on the reefs); Cuming.

According to Küster the coloured variety of this species, represented in the accompanying plate at fig. 196 *a*, is the *Mitra Cancellarioides* of Anton. It was described many years since in the Philosophical Magazine by Swainson, whose name I have now before me in his own hand-writing.

Species 197. (Fig. *a*, Mus. Taylor; Fig. *b*, Mus. Norris.)

MITRA VIRGATA. *Mitr. testâ oblongo-ovatâ, spirâ brevi, apice acuminatâ; lævigatâ, nitidâ, basem versus impresso-striatâ; nigerrimo-fuscâ, virgis albis longitudinalibus flexuosis, interdum medio interruptis, ornatâ, anfractu ultimo zonulâ pallidâ angustâ nonnunquam supernè cingulato; columellâ quadriplicatâ; labro medio contracto, supernè sinuato.*

THE STRIPED MITRE. Shell oblong-ovate, spire short, acuminated at the apex; smooth, shining, impressly striated towards the base; very dark blackish brown, ornamented with white flexuous longitudinal stripes sometimes interrupted or broken in the middle, last whorl occasionally encircled round the upper part with a small narrow pale zone; columella four-plaited; lip contracted in the middle, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1844.

Mitra retusa, var., Gray; Zool. Beechey's Voyage.

Hab. Island of Luzon, Philippines (found under stones and in crevices of rocks); Cuming.

This species is exactly intermediate between the *Mitræ paupercula* and *retusa*.

Species 198. (Mus. Ross.)

MITRA ROSSIÆ. *Mitr. testâ fusiformi-ovatâ, transversim punctato-striatâ; albicante, lineis fulvis longitudinalibus et transversis clathratâ, transversis valdè eminentioribus; columellâ quadriplicatâ, basi fuscescente tinctâ.*

ROSS'S MITRE. Shell fusiformly ovate, transversely striated with punctures; whitish, latticed with longitudinal and transverse fulvous lines, the latter of which are much the stronger; columella four-plaited, stained with brown at the base

Mitra tessellata, Swainson, Zool. Illus., 2nd Series.

Mitra ornata, Kiener (not of Schubert and Wagner).

Hab. —— ?

The accompanying figure of this species is taken from a drawing, in the possession of Mr. Sowerby, of a specimen

194

195

196a

196 b

197 a

198

197 b

199

201

200

MITRA.

PLATE XXV.

Fig. 194. (Mus. Taylor.)—Front view of the *Mitra maculosa*, Sp. 178, figured, but not named, in Martini Conch. Cab., vol. iv. pl. 150. f. 1400.

Species 195. (Mus. Cuming.)

MITRA PORPHYRETICA. *Mitr. testâ obeso-ovatâ, basi subgranosâ, spirâ acutè turritâ; longitudinaliter plicato-costatâ, costis angulatis; anfractibus supra albicantibus, infra olivaceo-cinereis, albizonulatis; columellâ quadriplicatâ; aperturâ brevi.*

THE PORPHYRY MITRE. Shell stoutly ovate, somewhat granose at the base, spire sharply turreted; longitudinally plicately ribbed, ribs angular; whorls white above, olive ash-colour beneath, encircled with small white zones; columella four-plaited; aperture short.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

A short stout species with a sharp angularly turreted spire, encircled with bands of a peculiarly livid olive ash colour.

Species 196. (Fig. 196 *a*, Mus. Cuming; Fig. 196 *b*, Mus. Norris.)

MITRA NODOSA. *Mitr. testâ obeso-ovatâ, spirâ angulato-turritâ; anfractibus undique fortiter tuberculatis, supra transversim impresso-striatis, infra lævibus; albidâ, interdum livido-cærulescente aurantioque zonulatâ; columellâ quadriplicatâ, plicâ supremâ maximâ; aperturâ brevi, pallidè aurantiâ.*

THE NODOSE MITRE. Shell stoutly ovate, spire angularly turreted; whorls everywhere strongly tuberculated, transversely impressly striated above, smooth beneath; whitish, sometimes encircled with livid blue and orange zones; columella four-plaited, the uppermost plait very large; aperture short, palely tinged with orange.

Tiara nodosa, Swainson, Philosophical Magazine.

Mitra fraga, deinde *tuberculata*, Kiener.

Mitra Cancellarioides, Anton.

Hab. China, Philippine Islands, and Lord Hood's Island (found under stones and under coral on the reefs); Cuming.

According to Küster the coloured variety of this species, represented in the accompanying plate at fig. 196 *a*, is the *Mitra Cancellarioides* of Anton. It was described many years since in the Philosophical Magazine by Swainson, whose name I have now before me in his own hand-writing.

Species 197. (Fig. *a*, Mus. Taylor; Fig. *b*, Mus. Norris.)

MITRA VIRGATA. *Mitr. testâ oblongo-ovatâ, spirâ brevi, apice acuminatâ; lævigatâ, nitidâ, basem versus impresso-striatâ; nigerrimo-fuscâ, virgis albis longitudinalibus flexuosis, interdum medio interruptis, ornatâ, anfractu ultimo zonulâ pallidâ angustâ nonnunquam supernè cingulato; columellâ quadriplicatâ; labro medio contracto, supernè sinuato.*

THE STRIPED MITRE. Shell oblong-ovate, spire short, acuminated at the apex; smooth, shining, impressly striated towards the base; very dark blackish brown, ornamented with white flexuous longitudinal stripes sometimes interrupted or broken in the middle, last whorl occasionally encircled round the upper part with a small narrow pale zone; columella four-plaited; lip contracted in the middle, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1844.

Mitra retusa, var., Gray; Zool. Beechey's Voyage.

Hab. Island of Luzon, Philippines (found under stones and in crevices of rocks); Cuming.

This species is exactly intermediate between the *Mitræ paupercula* and *retusa*.

Species 198. (Mus. Ross.)

MITRA ROSSIÆ. *Mitr. testâ fusiformi-ovatâ, transversim punctato-striatâ; albicante, lineis fulvis longitudinalibus et transversis clathratâ, transversis valdè eminentioribus; columellâ quadriplicatâ, basi fuscescente tinctâ.*

ROSS'S MITRE. Shell fusiformly ovate, transversely striated with punctures; whitish, latticed with longitudinal and transverse fulvous lines, the latter of which are much the stronger; columella four-plaited, stained with brown at the base

Mitra tessellata, Swainson, Zool. Illus., 2nd Series.

Mitra ornata, Kiener (not of Schubert and Wagner).

Hab. —— ?

The accompanying figure of this species is taken from a drawing, in the possession of Mr. Sowerby, of a specimen

in the celebrated collection of the late Mrs. Ross, and I dedicate it to the memory of that lady in consequence of the name given to it by Swainson having been pre-occupied by Martyn, whilst that adopted by Kiener has been used by its authors to distinguish a shell which is evidently the young or bad state of another species.

Species 199. (Mus. Norris.)

MITRA RETUSA. *Mitr. testâ ovato-cylindraceâ, crassiusculâ, spirâ brevi, retusâ; transversim impresso-striatâ; albidâ, lineis cinereis aut rubris, angustis, flexuosis, longitudinaliter pictâ, anfractu ultimo zonulâ pallidâ parvâ superne cingulato; columellâ quadriplicatâ; labro fortiter sinuato.*

THE BLUNT MITRE. Shell ovately cylindrical, rather thick, spire short, blunt; transversely impressly striated; whitish, painted longitudinally with narrow red or ash-coloured lines or stripes, last whorl encircled with a small pale zone round the upper part; columella four-plaited; lip strongly sinuated.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 336.

Hab. Island of Luzon, Philippines (found under stones at low water); Cuming.

This species, both varieties of which are very characteristically figured by Küster, differs materially from the *Mitra virgata*, which has been confounded with it by Mr. Gray in the Zoology of Beechey's Voyage, both in form and sculpture, as well as in its style of colouring. The spire is peculiarly blunted; the surface is transversely finely grooved; and the stripes, instead of being white upon a coloured ground, are coloured upon a white ground.

Species 200. (Mus. Norris.)

MITRA CHRYSALIS. *Mitr. testâ ovatâ, spirâ brevi, subretusâ; transversim undique sulcatâ; fuscâ aut fuscescente, anfractu ultimo maculis interruptis medio uniseriatim cincto; columellâ quadriplicatâ; labro medio contracto.*

THE GRUB MITRE. Shell ovate, spire short, rather blunt, transversely grooved throughout; brown or light brown, last whorl encircled round the middle with an interrupted row of spots; columella four-plaited; lip contracted in the middle.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

May be distinguished from the young of the following species by its peculiarly contracted lip.

Species 201. (Mus. Norris.)

MITRA CUCUMERINA. *Mitr. testâ ovatâ, ventricosâ, utrinque attenuatâ, transversim undique sulcatâ, liris intermediis convexo-elevatis; rubrâ vel aurantiâ, anfractu ultimo maculis albis interruptis uniseriatim cincto; columellâ quadriplicatâ.*

THE CUCUMBER-LIKE MITRE. Shell ovate, ventricose, attenuated at both ends, transversely grooved throughout, intermediate ridges convexly raised; red or orange, last whorl encircled round the middle with an interrupted row of white spots.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 332. *Cucumis striatus*, Klein.

Hab. Island of Annaa, Pacific Ocean (found under coral at low water); Cuming.

The title of this ancient and well-known species is, I believe, derived from an observation made by Pliny, that the animal smells like a cucumber.

202

203

204

205

206

207

208

209

210

211

werby del et lith.

prel: lith: Linn: imp.

MITRA.

PLATE XXVI.

For Species 202 see Plate XXXI., the shell here figured proving upon mature examination to be a variety of the *Mitra microzonias*.

Species 203. (Mus. Cuming.)

MITRA CONCINNA. *Mitr. testâ ovatâ, basi contractâ, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter costatâ, costis angulum super granoso-mucronatis, liris parvis obtusis transversim decussatis; liris transversis vividè luteis, interstitiis nigricante-castaneis; columellâ quadriplicatâ.*

THE NEAT MITRE. Shell ovate, contracted at the base, spire turreted; whorls angulated at the upper part, longitudinally ribbed, ribs granosely pointed upon the angle, transversely crossed with small obtuse ridges; ridges bright yellow, interstices very dark chesnut; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

A bright prettily painted species very closely approximating in form and sculpture to the *Mitra crocata*, Sp. 206.

Species 204. (Mus. Cuming.)

MITRA VENUSTULA. *Mitr. testâ ovatâ, spirâ acuminatâ, anfractibus convexis, longitudinaliter granoso-costatis, vividè luteis, zonulis angustis nigerrimo-castaneis duobus tribusve cingulatis; columellâ quadriplicatâ.*

THE PRETTY MITRE. Shell ovate, spire acuminated, whorls convex, longitudinally granosely ribbed; bright yellow, encircled with two or three narrow dark chesnut zones; columella four-plaited.

REEVE, Pro. Zool. Soc. 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

The whorls of this species have not the same angular structure as those of the preceding, nor are the ribs granosely pointed at the upper extremity.

Species 205. (Mus. Norris.)

MITRA MURICULATA. *Mitr. testâ abbreviato-conicâ, spirâ turritâ, apice mucronato; anfractibus transversim granoso-liratis, supernè peculiariter plano-angulatis, angulo tuberculis grandibus prominentibus coronato; aurantio-lutescente; columellâ quadriplicatâ.*

THE MURICULATED MITRE. Shell shortly conical, spire turreted, apex sharp pointed, whorls transversely granosely ridged, peculiarly flatly angulated at the upper part, angle crowned with large prominent tubercles; orange-yellow; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. x. p. 333.

Hab. Islands of Ticao and Capul, Philippines (found on the reefs at low water); Cuming.

This species may be readily distinguished by its very conspicuously coronated spire.

Species 206. (Mus. Cuming.)

MITRA CROCATA. *Mitr. testâ ovatâ, basi contractâ, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis angulum super mucronatis, liris granosis obtusis transversim decussatis; rufescente-crocatâ, zonulâ unicâ angustâ albâ infra angulum cingulatâ; columellâ quadriplicatâ.*

THE SAFFRON-COLOURED MITRE. Shell ovate, contracted at the base, spire turreted; whorls angulated at the upper part, longitudinally ribbed, ribs pointed upon the angle, crossed with obtuse granose ridges; reddish saffron colour, encircled beneath the angle with a single narrow white zone; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes edit.) vol. x. p. 307.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

The narrow white zone which characterizes this species, occupies the third ridge from the angle in each whorl.

Species 207. (Mus. Cuming.)

MITRA FLAVESCENS. *Mitr. testâ ovatâ, spirâ subacuminatâ, anfractibus longitudinaliter costatis, costis supernè subnodosis, liris granosis decussatis; flavescente, zonâ fuscâ medio albilineatâ cinctâ; columellâ quadriplicatâ.*

THE PALE YELLOW MITRE. Shell ovate, spire somewhat acuminated, whorls longitudinally ribbed, ribs slightly nodose at the upper part, decussated with granulated ridges; pale yellow, encircled with a brown zone having a white line in the middle of it; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

Allied to the preceding species by its style of sculpture, but differing in form, and pattern of colouring.

Species 208. (Mus. Cuming.)

MITRA PYRAMIDALIS. *Mitr. testâ elongato-ovatâ, spirâ pyramidali-acuminatâ; anfractibus convexis, supernè angulatis, longitudinaliter costatâ, costis liris nodulosis transversis decussatis; aurantiâ, zonâ albidâ undique cingulatâ; columellâ quadriplicatâ.*

THE PYRAMIDAL MITRE. Shell elongately ovate, spire pyramidally acuminated; whorls convex, angulated at the upper part, longitudinally ribbed, ribs crossed by transverse nodulous ridges; orange, encircled throughout by a white zone; columella four-plaited.

Tiara aurantia, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

The painting and sculpture of this shell are both very similar to those of the *Mitra crocata*, the form is however altogether different. Swainson's specific name cannot be admitted in consequence of its having been already used in reference to Sp. 182.

Species 209. (Mus. Cuming.)

MITRA SPECIOSA. *Mitr. testâ ovatâ, basi contractâ, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis latiusculis, obtuso-prominentibus, interstitiis transversim impresso-striatis; luteâ, ustulato-fusco variè fasciatâ et lineolatâ; columellâ quadriplicatâ.*

THE BEAUTIFUL MITRE. Shell ovate, contracted at the base, spire turreted; whorls angulated at the upper part, longitudinally ribbed, ribs rather broad, obtusely prominent, interstices transversely impressly striated; yellow, variously banded and lineated with burnt brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

This shell exhibits a beautiful variation of colour; the ribs are not crossed with granose ridges, like those of the *Mitræ concinna, crocata*, and *flavescens*, but have the interstices engraved with fine impressed striæ.

Species 210. (Mus. Cuming.)

MITRA AUREOLATA. *Mitr. testâ oblongo-ovatâ, spirâ subturritâ; anfractibus longitudinaliter costatis, costis liris granulosis angustis, crebris decussatis; vividè rubro-aureolatâ, zonulâ albâ cinctâ, granulis albis; columellâ quadriplicatâ.*

THE GOLDEN-YELLOW MITRE. Shell oblong-ovate, spire somewhat turreted; whorls longitudinally ribbed, ribs decussated with narrow close-set granular ridges; bright reddish golden yellow encircled with a white zone, granules white; columella four-plaited.

Tiara aureolata, Swainson, MSS.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

The cross ridges of this species are narrow and rather close-set.

Species 211. (Mus. Cuming.)

MITRA AFFINIS. *Mitr. testâ ovatâ, spirâ acuminato-turritâ; anfractibus longitudinaliter obtuso-costatis, costis liris planiusculis transversis decussatis; aurantio-rubrâ, fasciâ luteo-albicante cingulatâ; columellâ quadriplicatâ.*

THE ALLIED MITRE. Shell ovate, spire acuminately turreted; whorls longitudinally obtusely ribbed, ribs decussated with rather flattened transverse ridges; orange-red, encircled with a yellowish white band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

This species is so closely allied to the preceding that it is almost impossible to exhibit its specific differences in a figure on account of their minuteness. They are not, however, of an unimportant character; the cross ridges are somewhat flattened, the white band is broader, and the granules are of the same uniform colour as the ground.

212

213

214

215 a

216

217

215 b

218

219

220

Sowerby del et lith.

Printed by Reeve Brothers.

MITRA.

PLATE XXVII.

Species 212. (Mus. Norris.)

MITRA OLIVÆFORMIS. *Mitr., testâ cylindraceo-oblongâ, lævigatâ, politâ, spirâ brevi, acutâ, fortiter punctatâ; lutescente, basi nigricante-violaceâ; columellâ quinqueplicatâ; aperturâ longissimâ.*

THE OLIVE-SHAPED MITRE. Shell cylindrically oblong, smooth, polished, spire short, sharp, strongly punctured; pale yellow, tipped at the base with blackish violet; columella five-plaited; aperture very long.

Mitrella Olivæformis, Swainson, Zool. Illus., 2nd Ser.

Mitra conovula (pars), Quoy.

Hab. Island of Taheite (found among coral sand in shallow water on the reefs); Cuming.

I do not see how the shell represented by M. Quoy in the 'Voyage de l'Astrolabe,' at pl. 45 *bis*, f. 18 and 19, can be referred to this species; nor can I at all understand the figures given in illustration of it by M. Kiener, which bear a stronger resemblance to the *Mitra carbonacea*, Sp. 217, than to the *Mitra Olivæformis*.

Species 213. (Mus. Cuming.)

MITRA TURBEN. *Mitr. testâ oblongo-ovatâ, basi attenuatâ, spirâ obtuso-rotundatâ, suturis subprofundis; longitudinaliter creberrimè plicato-costellatis, costellis interstitiisque transversim impresso-striatis; aurantio-lutescente; columellâ quinqueplicatâ, plicis prominentibus; aperturâ intus striatâ.*

THE SPINNING-TOP MITRE. Shell oblong-ovate, attenuated at the base, spire obtusely rounded, sutures rather deep; longitudinally very closely plicately fine-ribbed, ribs and interstices transversely impressely striated; orange-yellow; columella five-plaited, plaits prominent; aperture striated within.

REEVE, Pro. Zool. Soc. 1844,

Hab. Philippine Islands (found under stones at low water); Cuming.

It is a curious fact that the whole of the specimens of this species collected by Mr. Cuming, have the lower portion of the lip broken away in exactly similar manner to that represented in the accompanying plate.

Species 214. (Mus. Cuming.)

MITRA VIRGO. *Mitr. testâ abbreviato-conicâ, supernè obesâ, spirâ truncatâ, depresso-occultâ; transversim sulcis subtilissimis, subpunctatis, undique creberrimè insculptâ, albidâ aut flavicante, basi nigricante-violaceâ; columellâ quadriplicatâ, callositate supernè munitâ.*

THE VIRGIN MITRE. Shell shortly conical, stout round the upper part, spire truncated, depressly hidden; transversely closely engraved throughout with very fine slightly punctured grooves; whitish or yellowish, base tipped with blackish violet, columella four-plaited, with a callosity at the upper part.

Conohelix virgo, Swainson (Broderip) Pro. Zool. Soc. 1835.

Hab. Rietea, Society Islands (found on the reefs in shallow water); Cuming.

This species may be recognised by its short truncated spire, and by the peculiar manner in which its entire surface is closely engraved with cross lines.

Species 215. (Mus. nobis.)

MITRA CITRINA. *Mitr. ovato-conicâ, supernè rotundatâ, solidiusculâ, spirâ brevi, apicem versus subtiliter sulcatâ, apice elato, acuto; lævigatâ, aurantio-citrinâ, livido-castaneo variè tinctâ, columellâ quinqueplicatâ; aperturâ longissimâ.*

THE CITRON-COLOURED MITRE. Shell ovately conical, rounded and rather solid at the upper part; spire short, finely striated towards the apex, apex raised, sharp; smooth, orange citron colour, variously stained with livid chesnut; columella five-plaited; aperture very long.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

A new and very remarkable Cone-like species, of which I have not seen any other specimen.

Species 126. (Mus. Taylor.)

MITRA CONICA. *Mitr. testâ ovato-conicâ, subinflatâ, basi leviter recurvâ, spirâ depressiusculâ, apice elato, acuto; anfractibus supernè angulatis, lævibus; livido-virescente, lineis fuscis regularibus nonnunquam impressis, cinctâ, interstitiis maculis niveis floccatâ; columellâ quinque- vel sex-plicatâ, aperturâ longissimâ*

THE CONICAL MITRE. Shell ovately conical, a little inflated, slightly recurved at the base, spire somewhat depressed, apex elevated and sharp; whorls angulated

at the upper part, smooth; livid green, encircled with brown regular lines, sometimes impressed, the interstices between which are flaked with snow-white spots; columella five- or six-plaited; aperture very long.

DESHAYES, Anim. sans vert. vol. x. p. 355.

Imbricaria conica, Schumacher.

Conohelix marmorata, Swainson.

Mitra marmorata, Schubert and Wagner.

Hab. Philippine and Society Islands (found among coral sand on the reefs); Cuming.

Schumacher's specific name should certainly be maintained for this species, after the example of M. Deshayes. Swainson's *Conohelix lineatus*, figured in the Zoological Illustrations, 1st Series, is probably nothing more than a pale discoloured example of his *Conohelix marmorata*.

Species 217. (Mus. Belcher)

MITRA CARBONACEA. *Mitr. testâ conicâ, supernè rotundatâ, spirâ brevi, apice elato, acuminato; lævigatâ, politâ, prope basin obsoletè sulcatâ; nigerrimâ; columellâ quinqueplicatâ; aperturâ longissimâ.*

THE CARBONACEOUS MITRE. Shell conical, rounded at the upper part, spire short, apex raised, acuminated; smooth, polished, obsoletely grooved near the base; very black; columella five-plaited; aperture very long.

Imbricaria carbonacea, Hinds, Zoology of the Voyage of the Sulphur, Mollusca, p. 41. pl. xi. f. 9 and 10.

Hab. L'Agulhas Bank, Cape of Good Hope (dredged from deep water on a gravelly floor); Hinds.

A bright jet black ebony-like shell.

Species 218. (Mus. Norris.)

MITRA FILUM. *Mitr. testâ cylindraceo-oblongâ, Olivæformi, lævigatâ, politâ, spirâ brevi, mucronatâ, puncturatâ; eburneâ, anfractu ultimo fasciâ olivaceo-fuscâ, filis albis tenuissimis flexuosis longitudinaliter strigatâ, prope basin cineto; columellâ quinqueplicatâ; apice basique nigricante-violaceis.*

THE THREAD-MARKED MITRE. Shell cylindrically oblong, Olive-shaped, smooth, polished, spire short, pointed, punctured; ivory white, last whorl encircled near the base with a broad olive-brown band, streaked longitudinally with fine white flexuous thread-like lines; columella five-plaited, apex and base of the shell tipped with blackish violet.

Voluta filum, Wood, Ind. Test. Supp. pl. 3. f. 30.

Hab. Zanzibar, East Coast of Africa; Thorn.

MM. Deshayes and Kiener have described and figured this shell as the *Mitra bicolor* of Swainson, which is merely a very young specimen of the *Mitra casta*. Mr. Swainson's figure, in the Zoological Illustrations, represents a white shell with a band of brown epidermis, and of fusiform structure, with a regular acuminated spire. The shell under consideration, is of the true *Oliva* form, tipped with blackish violet, the spire being comparatively very small; the coloured band is not merely a band of epidermis, but of coloured enamel; and it is remarkably well characterized by a profusion of fine white thread-like lines running down in a longitudinal direction, of which no mention is made by Mr. Swainson in describing his *Mitra bicolor*. "Elle est ornée," says Deshayes, "d'une large zone d'un beau brun, sur laquelle on remarque a l'aide de la loupe un grand nombre de petites linéoles blanchatres."

Species 219. (Mus. Cuming.)

MITRA OSSEA. *Mitr. testâ conicâ, supernè rotundatâ, spirâ brevissimâ, apice minuto, elato; lævigatâ, undique seriatim punctatâ; albidâ, aut flavicante; columellâ sexplicatâ,*

THE BONE MITRE. Shell conical, rounded at the upper part, spire very short, apex minute, elevated; smooth, encircled throughout with rows of punctures; whitish or yellowish; columella six-plaited.

Conohelix punctatus, Swainson, Zool. Illus., 1st Series.

Mitra punctata, Deshayes (not of Swainson).

Hab. Society Islands (found under coral on the reefs at low water); Cuming.

The entire surface of this shell, which has very much the appearance of a piece of polished bone or ivory, is encircled with rows of small punctures. It is perfectly distinct from the *Mitra Vanikorensis*, of which M. Kiener presumes to assert that it is a young discoloured example, and is well distinguished by M. Deshayes.

Species 220. (Mus. Norris.)

MITRA VANIKORENSIS. *Mitr. testâ conicâ, basi subrecurvâ, spirâ brevi, apice mucronato; lævigatâ, striis tenuissimè punctatis undique cingulatâ, cinereo-cærulescente, supernè albizonatâ, maculis minutis numerosis albis castaneo-marginatis ornatâ; columellâ sexplicatâ; aperturâ longissimâ.*

THE VANIKORO MITRE. Shell conical, base a little recurved, spire short, apex pointed; smooth, encircled throughout with very finely punctured striæ; ashy blue, ornamented with numerous minute white spots edged with chesnut; columella six-plaited; aperture very long.

QUOY, Voy. de l'Astrolabe, Zool. pl. 45 *bis*. f. 5 and 6.

Hab. Island of Vanikoro, New Zealand; Quoy.

An extremely pretty species, first collected by the indefatigable naturalists of the Astrolabe.

221

222a

222b

223a

224

225

223b

226

227

228

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del et lith.

Printed by Reeve Brothers.

MITRA.

PLATE XXVIII.

Species 221. (Mus. Cuming.)

MITRA FASTIGIUM. *Mitr. testâ abbreviato-ovatâ, subventricosâ, solidiusculâ, spirâ brevi, acuminatâ; lævigatâ, basem versus exiliter sulcatâ; luteâ; columellâ quadriplicatâ, basi truncatâ; labro simplici, supernè sinuato.*

THE CUPOLA MITRE. Shell shortly ovate, somewhat ventricose, rather solid, spire short, acuminated; smooth, faintly grooved towards the base; yellow; columella four-plaited, truncated at the base; lip simple, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

I have no information respecting the locality of this little compact cupola-shaped species.

Species 222. (Mus. King of Denmark.)

MITRA SEMIFERRUGINEA. *Mitr. testâ ovato-fusiformi, anfractibus subrotundis, transversim undique liratis, liris angustis, granulosis, interstitiis puncturatis; albidâ aut lutescente, anfractuum parte superiori flammis ferrugineis latis vividè tinctâ; columellâ quadriplicatâ.*

THE HALF-BROWN MITRE. Shell ovately fusiform, whorls rather round, transversely ridged throughout, ridges narrow, granulated, interstices punctured; whitish or yellowish, upper part of the whorls vividly stained with broad brown flames; columella four-plaited.

JONAS, (of Hamburgh) MSS.

Hab. —— ?

This interesting species has been forwarded to me from Copenhagen, with the above manuscript name, by the kind permission of HM. the King of Denmark, whose liberal and enterprising love of conchological science offers a noble example to the princes of other nations.

Species 223. (Fig. *a*, Mus. Cuming; Fig. *b*, Mus. King of Denmark.)

MITRA ANGULOSA. *Mitr. testâ fusiformi, spirâ turritâ, basi subrecurvâ, anfractibus supernè angulatis, longitudinaliter lyrato-costatis, costis angustis, ad angulum mucronatis, subdistantibus, interstitiis liris transversis conspicuè clathratis; fuscescente, fusco perparcè maculatâ; columellâ quadriplicatâ, basi subumbilicatâ.*

THE MANY-ANGLED MITRE. Shell fusiform, spire turreted, a little recurved at the base; whorls angulated at the upper part, longitudinally lyrately ribbed, ribs narrow, pointed at the angle, rather distant, interstices conspicuously latticed with transverse ridges; light brown, stained here and there with brown spots; columella four-plaited, slightly umbilicated at the base.

KUSTER, Conch. Cab., Part XII. fig. 8 and 9.

Turricula angulosa, Martini.

Hab. Island of Ticao, Philippines (found on the reefs); Cuming.

M. Küster appears to have had very little acquaintance with this species; his figures, above referred to, being merely copies of Martini's, (Conch. Cab., vol. iv. pl. 150. f. 1401 and 1402.)

Species 224. (Mus. Cuming.)

MITRA BULIMOIDES. *Mitr. testâ elongatâ, basi subtruncatâ, spirâ acuminatâ; tenuiculâ, subpellucidâ, quasi corneâ; albido-fuscescente; columellâ quadriplicatâ.*

THE BULIMUS-LIKE MITRE. Shell elongated, somewhat truncated at the base, spire acuminated, rather thin, somewhat transparent, as if horny; pale brownish; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A smooth transparent horny looking shell.

Species 225. (Mus. Cuming.)

MITRA RHODIA. *Mitr. testâ elongatâ, spirâ acuminatâ; lævissculâ, transversim subtilissimè striatâ; nigerrimo-fuscâ; columellâ triplicatâ, aperturâ brevi.*

THE ROSE-WOOD MITRE. Shell elongated, spire acuminated; rather smooth, transversely very finely striated; very dark brown; columella three-plaited, aperture short.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

Not much unlike the preceding species in form, but of a different colour and texture.

Species 226. (Mus. Norris.)

MITRA NUCLEOLA. *Mitr. testâ ovatâ, longitudinaliter costatâ, costis obtusis, subobsoletis, subgranosis; luteo-fulvâ; columellâ quadriplicatâ.*

THE LITTLE KERNEL MITRE. Shell ovate, longitudinally ribbed, ribs obtuse, rather obsolete, slightly granose; fulvous yellow; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 337.

Hab. —— ?

M. Kiener seems to doubt the propriety of separating this species from the *Mitra granulosa*; a species which in my opinion has no analogy whatever with it.

Species 227. (Mus. Norris.)

MITRA CÆLIGENA. *Mitr. testâ ovatâ, spirâ breviusculâ, suturis profundis; transversim sulcatâ, sulcis subpunctatis; luteo-fuscescente, albipunctatâ, anfractuum parte superiori balteo angusto lutescente cingulatâ; columellâ quadriplicatâ.*

THE STARRY MITRE. Shell ovate, spire rather short, sutures deep; transversely grooved, grooves slightly punctured; yellowish brown, dotted with white, upper part of the whorls encircled with a pale yellow belt; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

This species may be recognised by its entire surface being starred or speckled with small white spots.

Species 228. (Mus. Norris.)

MITRA AURICULOIDES. *Mitr. testâ ovatâ, crassâ, solidâ, basem versus striatâ, spirâ brevi, obtusâ; rubido-castaneâ, anfractuum parte superiori balteo albo unico angusto cingulatâ; columellâ quinqueplicatâ; labro intus superne sinuato.*

THE AURICULA-LIKE MITRE. Shell ovate, thick, striated towards the base, spire short, obtuse; reddish chesnut, upper part of the whorls encircled by a single narrow white belt; columella five-plaited; lip sinuated within at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Mitra unifascialis, Kiener (not of Lamarck).

Hab. —— ?

M. Deshayes has so ably expatiated on Kiener's category of blunders in regard to this species (Anim. sans vert. vol. x. p. 337. *note*), that I have only to add my testimony to the accuracy of his observations.

229

230

231

232

233

234

235 a

236 a

236 b

235 b

Sowerby del et lith.

Printed by Reeve Brothers.

MITRA.

PLATE XXIX.

(Figures moderately magnified.)

Species 229. (Mus, Cuming.)

MITRA DUPLILIRATA. *Mitr. testâ elongatâ, spirâ valdè acuminatâ, angustâ, tereti, basi tortuoso-recurvâ; transversim subtiliter dupliliratâ, liris interstitiisque granulosis; albidâ, aurantio-fusco hic illic concentricè flammatâ; columellâ quadriplicatâ, basi subcanaliculatâ.*

THE DOUBLE-RIDGED MITRE. Shell elongated, spire very acuminated, narrow, tapering, base twisted, recurved; transversely finely double-ridged, ridges and interstices granulated; whitish, painted here and there with concentric orange-brown flames; columella four-plaited, base somewhat canaliculated.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

This species has a very peculiar tapering form, and it may be seen, by the aid of a lens, that the transverse ridges are all duplicate.

Species 230. (Mus. Cuming.)

MITRA DISCOLORIA. *Mitr. testâ ovatâ, basi granulatâ, spirâ acuminato-turritâ; anfractibus supernè prominentibus, longitudinaliter conspicuè costatis, costis latiusculis, obtusis, transversim impresso lineatis; fasciis roseis et albis alternatâ, fasciis roseis inter costas ustulato-nigricantibus; columellâ quadriplicatâ; aperturâ parvâ.*

THE SUNDRY-COLOURED MITRE. Shell ovate, granulated at the base, spire acuminately turreted; whorls prominent round the upper part, longitudinally conspicuously ribbed, ribs rather broad, obtuse, transversely impressly lineated; alternated with pink and white bands, pink bands stained in the interstices between the ribs with burnt black; columella four-plaited; aperture small.

REEVE, Pro. Zool. Soc., 1844.

Hab. —— ?

A very characteristic prettily painted species, quite unlike any hitherto described.

Species 231. (Mus. Cuming.)

MITRA CORIACEA. *Mitr. testâ ovatâ utrinque attenuatâ, spirâ breviusculâ, acutè acuminatâ; anfractibus supernè rotundatis, transversim impresso-lineatis, interstitiis granosis; anfractuum parte superiori albidâ, infra fuscescente; columellâ quinqueplicatâ.*

THE CORIACEOUS MITRE. Shell ovate, attenuated at both ends, spire rather short, sharply acuminated, whorls rounded above, transversely impressly lineated, interstices granose; upper part of the whorls whitish, light brown beneath; columella five-plaited.

REEVE, Pro. Zool. Soc. 1845.

Hab. Island of Corrigidor, Philippines (found in course sand at the depth of five fathoms); Cuming.

Another species equally distinct and peculiar in its characters.

Species 232. (Mus. Cuming.)

MITRA VERRUCOSA. *Mitr. testâ ovatâ, subventricosâ, spirâ breviusculâ, acuminatâ; longitudinaliter concentricè plicatâ, plicis tuberculis parvis prominentibus mucronatis undique armatis; albâ, fuscescente pallidè fasciatâ; columellâ quinqueplicatâ.*

THE WARTY MITRE. Shell ovate, slightly ventricose, spire rather short, acuminated; longitudinally concentrically plaited, folds armed with small prominent sharp-pointed tubercles; white, banded with pale brown; columella five-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao (found in sandy mud in deep water); Cuming.

The tubercles with which the entire surface of this shell is covered, are quite sharp and prickly.

Species 233. (Mus. Cuming.)

MITRA ELEGANS. *Mitr. testâ oblongo-ovatâ, spirâ acuminatâ, suturis subprofundis, longitudinaliter subtilissimè costatâ, costis angustis, interstitiis eleganter clathratis; albicante aut pallidissimè carneo-fuscescente, lineâ rubrâ unicâ, aut pluribus, cingulatâ, apice fusco; columellâ quadriplicatâ.*

THE ELEGANT MITRE. Shell oblong ovate, spire acuminated, sutures rather deep, longitudinally very finely ribbed, ribs narrow, interstices elegantly latticed; whitish or tinged with very pale fleshy brown, encircled with one or more fine red lines; apex brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Burias, Philippines (found among coral sand and shells at the depth of four fathoms); Cuming.

This species is well characterised by the very elegant style of its sculpture, and by the sharp red line or lines with which it is encircled.

Species 234. (Mus. Cuming.)

MITRA DECORA. *Mitr. testâ subfusiformi, basi contractâ, spirâ acuminato-turritâ, suturis profundis; transversim impresso-sulcatâ, liris intermediis granulosis, plicisque angustis concentricis subdistantibus longitudinaliter ornatâ; albâ, balteo aurantio-fusco, anfractu ultimo balteis duobus, cingulatâ; columellâ quadriplicatâ, umbilicatâ, subcanaliculatâ.*

THE GRACEFUL MITRE. Shell somewhat fusiform, contracted at the base, spire acuminately turreted, sutures deep; transversely impressly striated, intermediate ridges granulous, ornamented longitudinally with narrow rather distant concentric folds; white, encircled with an orange brown belt, last whorl with two; columella four-plaited, umbilicated, slightly canaliculated.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A species of peculiar interest, whether in regard to form, colour, or sculpture.

Species 235. (Fig. *a* and *b*, Mus. Cuming.)

MITRA MUTABILIS. *Mitr. testâ abbreviato-fusiformi, spirâ turritâ, interdum elevatâ, interdum breviusculâ, suturis subprofundis; anfractibus supernè depressis, longitudinaliter concentricè costatâ, costis angustis, liris subtilibus transversis clathratis; albidâ, olivaceo-viridi fasciatâ, apice fusco; columellâ quadriplicatâ.*

THE CHANGEABLE MITRE. Shell abbreviately fusiform, spire turreted, sometimes elevated, sometimes rather short, sutures somewhat deep; whorls depressed at the upper part, longitudinally concentrically ribbed, ribs narrow, latticed with fine transverse ridges; whitish, banded with olive-green; apex brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones, at low water, and at the depth of about ten fathoms); Cuming.

An extremely variable species both in form and colour, the chief variations of which are represented by comparison in the accompanying figures.

Species 236. (Mus. Cuming.)

MITRA MILITARIS. *Mitr. testâ subfusiformi, basi contractâ, spirâ acuminatâ, suturis subprofundis; longitudinaliter costatâ, costis obtusiusculis, interstitiis transversim impresso-lineatis; anfractibus supernè luteis, ultimo zonâ latâ coccineo-rubrâ cingulato; columellâ quadriplicatâ, umbilicatâ.*

THE MILITARY MITRE. Shell somewhat fusiform, contracted at the base, spire acuminated, sutures rather deep; longitudinally ribbed, ribs somewhat obtuse, interstices transversely impressly lineated; whorls yellow at the upper part, last whorl encircled with a broad crimson red zone; columella four-plaited, umbilicated.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found on the sands); Cuming.

This species may be readily distinguished by the rich broad crimson-red band which encircles the last whorl. The whole of the Mitres figured in this plate are peculiarly characteristic, and distinct from any of the species that have come under my observation.

237 a

237 b

238

239

240

241

242

242

244

245

Sowerby del et lith.

Printed by Reeve Brothers

MITRA.

PLATE XXX.

(Specimens slightly magnified.)

Species 237. (Fig. *a* and *b*, Mus. Cuming.)

MITRA TUBEROSA. *Mitr. testâ obtuso-conicâ, crassâ, obesâ, spirâ brevi, basi truncatâ; longitudinaliter plicato-costatâ, costis rudis, subdistantibus, supernè tuberculato-nodosis; transversim lineari-sulcatâ, sulcis pertusis; luteo-olivaceâ aut fuscâ, supernè albâ, basi fuscâ, albi-punctatâ; columellâ quadriplicatâ.*

THE TUBEROUS MITRE. Shell obtusely conical, thick, stout, spire short, base truncated; longitudinally plicately ribbed, ribs rude, rather distant, tubercularly noduled at the upper part; transversely linearly grooved, grooves pricked; yellowish olive or brown, white at the upper part, base brown dotted with white.

REEVE, Pro. Zool. Soc., 1845.

Mitra patriarchalis junior, Lamarck; Enc. Méth. pl. 374. f. 1, *a*, *b*.

Hab. Island of Zebu, Philippines (found under stones at low water); Cuming.

This is a very characteristic, full grown species, quite distinct from the *Mitra patriarchalis* of larger size.

Species 238. (Mus. Metcalfe.)

MITRA FORTICOSTATA. *Mitr. testâ abbreviato-ovatâ, obesâ, spirâ subturritâ; anfractibus supernè angulatis, infra angulum longitudinaliter costatis, costis solidis, fortissimis, distantibus, basem versus subobsoletè granosis; nigerrimo-fuscâ; columellâ triplicatâ.*

THE STRONG-RIBBED MITRE. Shell shortly ovate, stout, spire somewhat turreted; whorls angulated at the upper part, longitudinally ribbed beneath the angle, ribs solid, very strong, distant, rather obsoletely granose towards the base; very dark blackish brown; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. New Holland.

This species has somewhat the appearance of the *Mitra ficulina*, but is of a much more solid structure, and not striated across.

Species 239. (Mus. Cuming.)

MITRA LOTA. *Mitr. testâ oblongo-ovatâ, spiræ suturis impressis, transversim subtilissimè impresso-striatis, longitudinaliter concentricè costatâ, costis basem versus granosis; rufulo-aurantiâ, viridi-fusco variegatâ; columellâ triplicatâ.*

THE WASHED MITRE. Shell oblong-ovate, sutures of the spire impressed, transversely very finely impressly striated, longitudinally concentrically ribbed, ribs granose towards the base; pale reddish orange, variegated with greenish brown; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The painting of this shell is of a peculiarly irregular character.

Species 240. (Mus. Cuming.)

MITRA PARDALIS. *Mitr. testâ ovatâ, solidiusculâ, obesâ, spirâ obtuso-rotundatâ; lævi, apicem versus exilissimè striatâ, longitudinaliter obsoletè plicato-costatâ, basi subgranosâ; coccineo-rufâ, anfractibus maculis albis grandibus, connexis, in medio uniseriatim cinctis; columellâ quadriplicatâ.*

THE PANTHER MITRE. Shell ovate, rather solid, stout, spire obtusely rounded; smooth, very faintly striated towards the apex, longitudinally obsoletely plicately ribbed, somewhat granose at the base; scarlet-red, whorls encircled round the middle with a single row of large white connected spots; columella four-plaited.

KUSTER, Conchylien Cabinet, pl. 17. f. 14, 15.

Hab. ——?

Described by Küster from apparently a much smaller specimen than that represented in the accompanying plate.

Species 241. (Mus. Cuming.)

MITRA CONSANGUINEA. *Mitr. testâ ovatâ, solidiusculâ, obesâ, basem versus contractâ, spirâ obtuso-rotundatâ; transversim subtilissimè punctato-striatâ, longitudinaliter confertim plicato-costatâ, costis infernè granosis; rubidâ, anfractibus maculis rotundis parvis in medio uniseriatim cinctis; columellâ quadriplicatâ.*

THE KINDRED MITRE. Shell ovate, rather solid, stout, contracted towards the base, spire obtusely rounded; transversely very finely striated with punctures, longitudinally closely plicately ribbed, ribs granose at the

lower part; dark red, whorls encircled round the middle with a row of small round white spots; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

Though intimately allied to the preceding species, it is fully distinguished by its more contracted form, uniform darker colour, and smaller isolated spots.

Species 242. (Mus. Cuming.)

MITRA CREMANS. *Mitr. testâ obeso-ovatâ, spirâ brevi, suturis subimpressis; lævi, basem versus granosâ, longitudinaliter subobliquè plicatâ; nigerrimâ, flammis rufo-aurantiis hic illic variegatâ; columellâ triplicatâ.*

THE BURNING MITRE. Shell stoutly ovate, spire short, sutures slightly impressed; smooth, granose towards the base, longitudinally rather obliquely plaited; very dark black, variegated here and there with reddish orange flames; columella three-plaited.

REEVE, Pro. Zool. Soc., 1844.

Hab. St. Nicolas, Island of Zebu, Philippines (found under stones at low water); Cuming.

This species may be known by its confused flame-like style of painting.

Species 243. (Mus. Cuming.)

MITRA LEUCODESMA. *Mitr. testâ obeso-ovatâ, spirâ brevissimâ, longitudinaliter plicato-costatâ; lævi, apice crenulatâ, basi granulatâ; nigerrimo-fuscâ, anfractibus macularum albarum zonâ unicâ in medio cingulatâ; columellâ quadriplicatâ.*

THE WHITE-CHAIN MITRE. Shell stoutly ovate, spire very short, longitudinally plicately ribbed; smooth, crenulated at the apex, granulated at the base; very dark blackish brown; whorls encircled round the middle with a chain of white spots; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

Painted in a manner very similar to the *Mitra microzonias*, from which it is materially distinct in form.

Species 244. (Mus. Cuming.)

MITRA LAUTI. *Mitr. testâ obeso-ovatâ, solidiusculâ, spirâ obtuso-rotundatâ; longitudinaliter subobsoletè plicato-costatâ, costis lævibus, interstitiis impresso-striatis; costis aurantio-rufis, interstitiis nigerrimis, anfractuum medio albo; columellâ quadriplicatâ.*

THE GAILY PAINTED MITRE. Shell stoutly ovate, rather solid, spire obtusely rounded; longitudinally rather obsoletely plicately ribbed, ribs smooth, interstices impressly striated; ribs orange-red, interstices dark black, middle of the whorls white; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Masbate, Philippines (found under stones at low water); Cuming.

A very distinct stout prettily painted species.

Species 245. (Mus. Cuming.)

MITRA LUCULENTA. *Mitr. testâ ovatâ, lævi, longitudinaliter subobsoletè plicato-costatâ, costis basem versus granosis; anfractibus zonis cæruleo-nigris et albis alternatim conspicuè pictâ, columellâ triplicatâ.*

THE CLEAR MITRE. Shell ovate, smooth, longitudinally rather obsoletely plicately ribbed, ribs granose towards the base; whorls conspicuously painted with alternate blue-black and white zones; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Philippine Islands; Cuming.

This species may be easily recognised by the very decided character of its painting, which consists of alternate blue-black and white zones.

246

247

248

249

250

251

252

253

254

255

Sowerby del et sculp.

Reeve Brothers lith. from Copper

MITRA.

PLATE XXXI.

Species 246. (Mus. Cuming.)

MITRA AVENACEA. *Mitr. testâ oblongo-ovatâ, transversim undique liratâ, liris angustis, elevatiusculis; flavescente-spadiceâ, juxta suturas albicante subindistinctè maculatâ; columellâ quadriplicatâ.*

THE OAT-GRAIN MITRE. Shell oblong-ovate, transversely ridged throughout, ridges narrow, somewhat elevated; light yellowish bay, rather indistinctly spotted next the sutures with white; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Islands of Burias, Ticao, and Capul, Philippines (found on the reefs, and in sandy mud at the depth of about six fathoms); Cuming.

A solid closely ridged shell not distinguished by any particular feature.

Species 247. (Mus. Cuming.)

MITRA PICA. *Mitr. testâ ovatâ, tenuiculâ, subventricosâ, spirâ breviusculâ, acutâ; anfractibus lævibus, aterrimis, supernè et infernè niveis; columellâ triplicatâ; aperturâ subamplâ.*

THE MAGPIE MITRE. Shell ovate, rather thin, slightly ventricose, spire rather short, sharp; whorls smooth, very dark black, snowy white at the upper and lower parts; columella three-plaited; aperture somewhat large.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

This is a very characteristic species, and may be easily recognised by the jagged white band with which the whorls are encircled next the sutures.

Species 248. (Mus. Cuming.)

MITRA CITHARA. *Mitr. testâ ovatâ, crassiusculâ, suturis impressis; longitudinaliter creberrimè costatâ, costis angustis, obtusis, interstitiis transversim clathratis; purpureo-plumbeâ, zonulâ pallidâ angustâ cingulatâ; columellâ quadriplicatâ.*

THE HARP MITRE. Shell ovate, rather thick, sutures impressed; longitudinally very closely ribbed, ribs narrow, obtuse, interstices transversely lattiecd; purple lead-colour, encircled with a narrow pale zone; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The colour of this species is a peculiar purple lead.

Species 249. (Mus. Cuming.)

MITRA NYMPHA. *Mitr. testâ subfusiformi, spirâ acuminatâ; anfractibus transversim punctato-striatis; incarnato-fuscescente, albo maculato-variegatâ, anfractu ultimo fasciâ albidâ subindistinctâ cingulato; columellâ quadriplicatâ.*

THE NYMPH MITRE. Shell somewhat fusiform, spire acuminated; whorls transversely striated and punctured; pale fleshy brown variegated with blotches of white, last whorl encircled with a rather indistinct whitish band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A solid punctured shell of a fleshy brown or pale salmon colour, variegated with white spots, especially next the sutures.

Species 250. (Mus. Cuming.)

MITRA IMPRESSA. *Mitr. testâ subulato-ovatâ, basi truncatâ, spirâ longiusculâ; longitudinaliter creberrimè noduloso-liratâ, transversim profundè impressâ; columellâ quinqueplicatâ; aperturâ brevi.*

THE IMPRESSED MITRE. Shell subulately ovate, truncated at the base, spire rather long; longitudinally very closely nodulously ridged, transversely deeply impressed; columella five-plaited; aperture short.

ANTON; Küster, Conch. Cab. pl. 14. f. 6, 7.

Hab. Japan; Dr. Siebald.

This excellent species, without careful examination, might be mistaken for a *Mitra granulosa.*

Species 251. (Mus. Cuming.)

MITRA CALLOSA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, suturis subimpressis; lævigatâ, basi liratâ; plumbeo-fuscâ, punctis fascis hic illic variegatâ; columellâ fuscâ, quinqueplicatâ, callositate albâ supernè armatâ, plicis albis; labro subflexuoso.*

THE CALLOUS MITRE. Shell oblong-ovate, spire rather

short, sutures somewhat impressed; smooth, ridged towards the base; leaden brown, variegated here and there with brown dots, columella brown, five-plaited, armed at the upper part with a white callosity, plaits white; lip slightly flexuous.

REEVE, Pro. Zool. Soc., 1845.

Hab. Pasacao, Island of Luzon, Philippines (found on the sands); Cuming.

The form and colour of this species reminds one somewhat of certain varieties of the *Mitra ebenus*, from which it is, however, perfectly distinct.

Species 252. (Mus. Cuming.)

MITRA ÆGRA. *Mitr. testâ fusiformi, spirâ acuminatâ; transversim undique crebriliratâ, liris lævibus, interstitiis puncturatis; fuscescente, roseo-albicante pallidè et indistinctè fasciatâ et maculatâ; columellâ quadriplicatâ.*

THE SICKLY MITRE. Shell fusiform, spire acuminated, transversely closely ridged throughout, ridges smooth, interstices punctured; pale brown, faintly and indistinctly banded and spotted with pinkish white; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The form of the *Mitra ægra* is very similar to that of the *Mitra cylindracea*; but, as may be seen by the descriptions, they differ materially in sculpture.

Species 253. (Mus. Cuming.)

MITRA MURICATA. *Mitr. testâ ovatâ, spirâ brevi; longitudinaliter noduloso-costatâ, transversim lineato-impressâ; fuscâ, epidermide olivaceâ indutâ; columellâ triplicatâ.*

THE MURICATED MITRE. Shell ovate, spire short, longitudinally nodulously ribbed, transversely lineately impressed; brown, covered with an olive epidermis; columella three-plaited.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Gallapagos Islands (dredged from sandy mud at the depth of six fathoms); Cuming.

This species may be recognised by its high-shouldered form, and the rough nodulous character of its sculpture.

Species 254. (Mus. Cuming.)

MITRA MODESTA. *Mitr. testâ subfusiformi-ovatâ, basi contractâ, spirâ turritâ; anfractibus rotundatis, longitudinaliter costatis, interstitiis transversim cancellato-impressis; niveâ, rosaceo basem versus pallidissimè tinctâ; columellâ quadriplicatâ, aperturæ fauce rosaceâ.*

THE MODEST MITRE. Shell somewhat fusiformly ovate, contracted at the base, spire turreted; whorls rounded, longitudinally ribbed, interstices transversely cancellately impressed; snowy white, very palely stained towards the base with pink; columella four-plaited; interior of the aperture pink.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

A very chaste pink-white shell with a highly relieved latticed sculpture.

Species 255. (Mus. Cuming.)

MITRA FULVESCENS. *Mitr. testâ abbreviato-fusiformi, crassâ, spiræ suturis subprofundis; lævigatâ, transversim undique punctato-striatâ; luteo-fulvescente; columellâ quinqueplicatâ.*

THE PALE-BROWN MITRE. Shell shortly fusiform, thick, sutures of the spire rather deep, transversely striated with punctures throughout; pale yellowish brown; columella five-plaited.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Mitra striata? Gray; Zool. of Beechey's Voyage.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

The general character of this shell so closely resembles that of the *Mitra fulva* that it might be taken for the young of that species, were it not for the difference of its proportions.

256

257

258

259

260

261

262

263

264

265

Sowerby del et sculp.

Reeve Brothers, lith: from Copper.

MITRA.

PLATE XXXII.

(Figures moderately magnified.)

Species 256. (Mus. Cuming.)

MITRA SEMEN. *Mitr. testâ ovatâ, utrinque attenuatâ, lævigatâ, politâ; castaneo-fuscâ, lineis albidis undatis longitudinaliter pictâ; columellâ triplicatâ.*

THE SEED MITRE. Shell ovate, attenuated at both ends, smooth, polished; chesnut-brown, painted longitudinally with white waved lines; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puerto Galero, Island of Mindoro, Philippines (found on the sands at low water); Cuming.

The fine waved longitudinal lines are very characteristic in this species.

Species 257. (Mus. Metcalfe.)

MITRA MILIUM. *Mitr. testâ ovato-fusiformi, crassiusculâ, lineis elevatiusculis undique creberrimè decussatâ; rufescente-fuscâ; columellâ quadriplicatâ; aperturâ subangustâ, labro incrassato.*

THE MILLET-GRAIN MITRE. Shell ovately fusiform, rather thick, very closely decussated throughout with slightly elevated lines; reddish-brown; columella five-plaited; aperture rather narrow, lip thickened.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

An interesting species, belonging to a small group of a peculiar narrow contracted structure, with thickened lip, of which the *Mitræ gratiosa, recurva, exilis,* and *mirifica* are characteristic examples.

Species 258. (Mus. Metcalfe.)

MITRA LACHRYMA. *Mitr. testâ ovatâ, utrinque attenuatâ, tenuiculâ, spirâ brevi, subobtusâ; anfractibus supernè longitudinaliter subtilissimè costatâ, transversim obsoletè elevato-striatâ; albâ, maculâ grandi aurantio-fuscescente dorso peculiariter pictâ; columellâ bi-vel tri-plicatâ, plicis ferè obsoletis; labro effuso.*

THE TEAR MITRE. Shell ovate, attenuated at both ends, rather thin, spire short, somewhat obtuse; whorls longitudinally very finely ribbed at the upper part, transversely marked with obsolete raised striæ; white, peculiarly painted at the back with a large orange-brown blotch; columella two- or three-plaited, plaits nearly obsolete; lip effused.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

A small white transparent looking shell which may be readily distinguished by the large brown spot on the back of the last whorl.

Species 259. (Mus. Cuming.)

MITRA CATENATA. *Mitr. testâ ovatâ, basi contractâ, longitudinaliter costatâ, costis parvis, angustis, subobsoletis; albidâ, maculis grandibus irregularibus ferrugineis, fasciatim dispositis, pictâ; columellâ quadriplicatâ, basi subrecurvâ.*

THE LINKED MITRE. Shell ovate, contracted at the base, longitudinally ribbed; ribs small, narrow, somewhat obsolete; white, painted with large irregular rusty brown spots, arranged in bands; columella four-plaited, recurved at the base.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs in shallow water); Cuming.

The character of this species is very different from that of any other of the genus.

Species 260. (Mus. Cuming.)

MITRA CIMELIUM. *Mitr. testâ abbreviato-fusiformi, spirâ turritâ, longitudinaliter costatâ, costis supernè tuberculatâ; albâ, costis infra tuberculis lineis brevibus nigerrimo-fuscis transversim vividè pictâ; columellâ quadriplicatâ.*

THE GEM MITRE. Shell shortly fusiform, spire turreted, longitudinally ribbed, ribs tuberculated at the upper part; white, ribs vividly painted beneath the tubercles with short transverse dark brown lines, columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The lower portion of the ribs of this species are crossed in a very peculiar manner with short brown parallel lines.

Species 261. (Mus. Forbes.)

MITRA GRANUM. *Mitr. testâ elongatâ, spirâ acuminatâ, basi liratâ; lævigatâ, politâ; intus extusque nigerrimo-fuscâ, fasciâ angustâ albidâ, nigro-undatâ, cingulatâ; columellâ triplicatâ.*

THE GRAIN MITRE. Shell elongated, spire acuminated, ridged at the base; smooth, polished; very dark blackish-brown within and without, encircled with a narrow white black-waved band; columella three-plaited.

FORBES, Brit. Association Report for 1843, p. 140.

Hab. Island of Candia, Ægean Sea (found among weed at the depth of about twenty fathoms); Forbes.

This interesting little species may be recognised by its narrow white band crossed longitudinally by waved black lines.

Species 262. (Mus. Cuming.)

MITRA TURRIGER. *Mitr. testâ fusiformi, spirâ angulato-turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis angustis, ad angulum muricato-tuberculatis, interstitiis transversim impressis; albidâ, fasciâ castaneâ latiusculâ inter costas pictâ; columellâ quadriplicatâ.*

THE TURRETED MITRE. Shell fusiform, spire angularly turreted; whorls angulated at the upper part, longitudinally ribbed, ribs narrow, prickly tubercled on the angle, interstices transversely impressed; whitish, painted between the ribs with a rather broad brown band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

A prickly sharply-turreted species encircled with a brown band which only appears in the interstices between the ribs.

Species 263. (Mus. Forbes.)

MITRA CLANDESTINA. *Mitr. testâ ovatâ, utrinque attenuatâ, transversim subtilissimè crebiliratâ, spirâ longitudinaliter plicatâ, apice papillari; luteo-fusescente; columellâ biplicatâ.*

THE SECRET MITRE. Shell ovate, attenuated at both ends, transversely very finely closely ridged, spire longitudinally plicated, papillary at the apex; pale yellowish brown; columella two-plaited.

FORBES.

Hab. ——?

A minute species in which the entire surface is transversely very finely ridged, whilst the spire, especially towards the apex, is somewhat obliquely longitudinally plicated.

Species 264. (Mus. Cuming.)

MITRA PEDICULUS. *Mitr. testâ ovatâ, crassiusculâ, spirâ brevi, acuminatâ; castaneo-fuscâ, liris albidis angustis undique regulariter cingulatâ; columellâ triplicatâ; labro crenulato.*

THE LOUSE MITRE. Shell ovate, rather thick, spire short, acuminated; chesnut-brown; regularly encircled throughout with narrow whitish ridges; columella three-plaited; lip crenulated.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. x. p. 341.

Hab. Island of Camiguing, Philippines (found under stones at low water); Cuming.

A small minute solid species, the sculpture of which very much resembles that of the *Mitra tabanula*.

Species 265. (Mus. Cuming.)

MITRA CÆLATA. *Mitr. testâ cylindraceo-ovatâ, basi contractâ, paululum elongatâ, spiræ suturis subprofundis; anfractibus longitudinaliter costatis, costis angustis, crebris, interstitiis impresso-cancellatis; lutescente-fuscâ, subindistinctè albifasciatâ; columellâ triplicatâ.*

THE CARVED MITRE. Shell cylindrically ovate, contracted and a little elongated at the base, sutures of the spire rather deep; whorls longitudinally ribbed, ribs narrow, close set, interstices impressly cancellated; yellowish brown, somewhat indistinctly banded with white; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Cagayan, Province of Misamis, Island of Mindanao, Philippines (dredged from sandy mud at the depth of thirty fathoms); Cuming.

The upper part of this shell has a peculiar cylindrically shortened structure, whilst the base is inclined to become elongated.

266

267

268

269

270

271

272

273

274

275

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del et sculp

Reeve Brothers lith. from Copper

MITRA.

PLATE XXXIII.

(Figures moderately magnified.)

Species 266. (Mus. Cuming.)

MITRA LUCIDA. *Mitr. testâ fusiformi, spirâ turritâ, basi subelongato-contractâ; anfractibus longitudinaliter costatâ, costis supernè tumidis; transversim elegantissimè liratis; lucido-albicante; columellâ quinqueplicatâ.*

THE LUCID MITRE. Shell fusiform, spire turreted, somewhat elongately contracted at the base; whorls longitudinally ribbed, ribs swollen at the upper part; transversely most elegantly ridged; transparent white; columella five-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Philippine Islands; Cuming.

A delicate species of a peculiarly elongated growth.

Species 267. (Mus. Cuming.)

MITRA TYPHA. *Mitr. testâ subelongatâ, spirâ acuminatâ; transversim subtilissimè striatâ, corneâ, translucidâ, fasciâ ferrugineâ latâ cingulatâ; columellâ triplicatâ.*

THE RYE-GRAIN MITRE. Shell somewhat elongated, spire acuminated; transversely very finely striated; horny, transparent, encircled with a broad rusty-brown band; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Loay, Island of Bohol, Philippines (found under stones at low water); Cuming.

A minute horny looking shell with a very conspicuous brown band.

Species 268. (Mus. Gruner.)

MITRA CAPENSIS. *Mitr. testâ ovatâ, tenuiculâ, medio ventricosâ, spirâ breviusculâ; anfractibus medio costatis, costis lævibus, interstitiis transversim cancellatis; anfractuum parte superiori albicante fusco maculatâ, infra totâ fuscâ, fusco basem versus evanido; columellâ quadriplicatâ.*

THE CAPE MITRE. Shell ovate, rather thin, ventricose in the middle, spire rather short; whorls ribbed round the middle, ribs smooth, interstices transversely cancellated; upper part of the whorls white, spotted with brown, beneath entirely brown, brown fading away towards the base; columella four-plaited.

DUNKER (of Cassel).

Hab. Cape of Good Hope.

This interesting little species has been forwarded to me with the above name in manuscript, but not accompanied with any authority or reference.

Species 269. (Mus. Cuming.)

MITRA TORNATA. *Mitr. testâ oblongo-ovatâ, spirâ acutâ, anfractibus convexis, transversim undique liratis, liris tribus supremis minoribus; lutescente-fuscâ, epidermide fuscâ indutâ; columellâ quadriplicatâ.*

THE TURNED MITRE. Shell oblong-ovate, spire sharp, whorls convex, transversely ridged throughout, the three uppermost ridges smaller than the rest; yellowish brown, covered with a brown epidermis; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Guimaras, Philippines (found under stones on the reefs at low water); Cuming.

The ridges of this species are distinguished for their regularity and precision.

Species 270. (Mus. Cuming.)

MITRA VULTUOSA. *Mitr. testâ ovatâ, spirâ breviusculâ; anfractibus convexis, ad suturas depresso-planis, transversim costatis, costis crebris, sulcis longitudinalibus angustis exsculptis; aurantio-fuscâ; columellâ quadriplicatâ.*

THE SULLEN MITRE. Shell ovate, spire rather short; whorls convex, depressly flattened at the sutures, transversely ribbed, ribs close-set, engraved with narrow longitudinal grooves; orange-brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found on the reefs); Cuming.

The longitudinal grooves impart a nodulous character to the transverse ribs.

Species 271. (Mus. Cuming.)

MITRA GRANATA. *Mitr. testâ oblongo-ovatâ, crassâ, transversim undique liratâ, liris parvis subtiliter granatis; lutescente-fuscâ, apice albicante; columellâ quadriplicatâ.*

THE GRAINED MITRE. Shell oblong ovate, thick, transversely ridged throughout, ridges small, finely grained; yellowish-brown, apex whitish; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao (found under stones at low water); Cuming.

This species may be recognised by the very finely-grained character of the ridges.

Species 272. (Mus. Cuming.)

MITRA PACIFICA. *Mitr. testâ oblongo-ovatâ, crassiusculâ, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter liratâ, liris numerosis, angustis, transversim impresso-sulcatis; albâ, fasciâ fuscâ inter liras solum cingulatâ; columellâ quadriplicatâ, plicâ supremâ valdè maximâ, aperturâ breviusculâ.*

THE PACIFIC MITRE. Shell elongately ovate, rather thick, spire turreted; whorls angulated at the upper part, longitudinally ridged, ridges numerous, narrow, transverely impressly grooved; white, encircled with a brown band between the ridges only; columella four-plaited, uppermost plait much the largest; aperture rather short.

REEVE, Pro. Zool. Soc., 1845.

Hab. Lord Hood's Island, Pacific Ocean; Cuming.

Allied in form to the *Mitra exasperata.*

Species 273. (Mus. Cuming.)

MITRA TURGIDA. *Mitr. testâ ovoideâ, medio turgidâ, basi contractâ, spirâ brevi, acuminatâ; transversim undique liratâ, sulcis subirregularibus longitudinaliter impressâ; columellâ triplicatâ.*

THE TURGID MITRE. Shell ovoid, swollen in the middle, contracted at the base, spire short, acuminated; transversely grooved throughout, longitudinally impressed with rather irregular grooves, columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

The sculpture of this shell is of a very similar character to that of the *Mitra tornata.*

Species 274. (Mus. Cuming.)

MITRA AMABILIS. *Mitr. testâ ovatâ, crassiusculâ, spirâ obtuso-depressâ; anfractibus subrotundatis, longitudinaliter costatis, transversim impresso-sulcatis; cinereo-griseâ, variè albifasciatâ; columellâ quadriplicatâ; aperturâ breviusculâ, intus fuscâ.*

THE FRIENDLY MITRE. Shell ovate, rather thick, spire obtusely depressed; whorls somewhat rounded, longitudinally ribbed, transversely impressly grooved; ashy grey, variously banded with white; columella four-plaited; aperture rather short, interior brown.

REEVE, Pro. Zool. Soc., 1845.

Hab. Islands of Ticao and Capul, Philippines (found under stones at low water); Cuming.

An extremely pretty species, alternately banded with white and ashy grey.

Species 275. (Mus. Cuming.)

MITRA PURPURATA. *Mitr. testâ ovatâ, utrinque attenuatâ, spirâ breviusculâ, subturritâ; anfractibus ad suturas plano-angulatis, longitudinaliter costatis, costis numerosis, angustis, prominentibus, interstitiis impresso-cancellatis; fusco-purpureâ, zonâ angustâ albâ cingulatâ; columellâ quadriplicatâ.*

THE PURPLE-TINGED MITRE. Shell ovate, attenuated at both ends, spire rather short, somewhat turreted; whorls flatly angulated at the sutures, longitudinally ribbed, ribs numerous, narrow, prominent, interstices impressly cancellated; brownish-purple, encircled with a narrow white zone; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

The whorls of this shell being flatly angulated at the sutures give a turreted character to the spire.

276

277

278

279

280

281

282

283

284

285

Sowerby del et sculp.

Reeve Brothers lith from copper

MITRA.

PLATE XXXIV.

(Figures moderately magnified.)

Species 276. (Mus. Gruner, Bremen.)

MITRA PUELLA. *Mitr. testâ rotundato-ovatâ, spirâ brevi, subobtusâ, suturis impressis; anfractibus transversim subtilissimè striatis, anfractus ultimi parte inferiori minutè nodiferâ; aterrimâ, anfractuum parte superiori maculis niveis pyriformibus, concentricè dispositis, conspicuè ornatâ; columellâ triplicatâ; labro intus denticulato.*

THE LITTLE DAMSEL MITRE. Shell rotundately ovate, spire short, somewhat obtuse, sutures impressed; whorls transversely very finely striated, lower part of the last whorl minutely nodiferous; jet black, upper part of the whorls conspicuously ornamented with a row of concentrically arranged snowy white pear-shaped spots; columella three-plaited; lip denticulated within.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of St Thomas, West Indies; Gruner.

The pyriform white spots which encircle the upper portion of each whorl exhibit a striking contrast with the deep jet black ground of the shell.

Species 277. (Mus. Cuming.)

MITRA GRATIOSA. *Mitr. testâ elongatâ, subcylindraceâ, liris prominentibus minutis creberrimè decussatâ; fuscâ; columellâ quinqueplicatâ; labro subincrassato.*

THE ESTEEMED MITRE. Shell elongated, somewhat cylindrical, very closely decussated with minute prominent ridges; brown; columella five-plaited; lip slightly thickened.

REEVE, Pro. Zool. Soc., 1845.

Hab. Gallapagos Islands, (found among coral sand at the depth of about seven fathoms); Cuming.

A narrow cylindrical shell with a beautifully decussated sculpture, and of an uniform brown colour.

Species 278. (Mus. Cuming.)

MITRA MIRIFICA. *Mitr. testâ elongatâ, gracili, subcylindraceâ, basi recurvâ, liris minutissimis creberrimè decussatâ; rosaceâ, subpellucidâ, zonulâ angustâ albidâ cingulatâ; columellâ sexplicatâ; labro subincrassato.*

THE WONDERFUL MITRE. Shell elongated, slender, somewhat cylindrical, recurved at the base, closely decussated with very minute ridges; pink, somewhat transparent, encircled with a narrow white zone; columella six-plaited; lip slightly thickened.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

The general aspect of this shell is very similar to that of the preceding species; upon examination it will be found, however, to be of a thinner and more slender structure, whilst the sculpture is of a smaller pattern, and the colour altogether different.

Species 279. (Mus. Cuming.)

MITRA INERMIS. *Mitr. testâ oblongo-ovatâ, longitudinaliter creberrimè plicatâ, basi sulcatâ; rufescente-fuscâ, fasciâ albidâ, fusco subtilissimè undulatâ, cinctâ; columellâ quadriplicatâ.*

THE UNARMED MITRE. Shell oblong ovate, longitudinally very closely plicated, grooved at the base; reddish brown, encircled with a whitish band crossed with fine brown zigzag lines; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puteao, Province of Albay, Island of Luzon (found on the sands); Cuming.

This species may be recognised by the very fine zigzag lines which traverse the white band.

Species 280. (Mus. Cuming.)

MITRA BRUMALIS. *Mitr. testâ elongatâ, subcylindraceâ, undique subtilissimè decussatâ; lutescente, aurantio-fusco pallidissimè hic illic tinctâ; columellâ quadriplicatâ.*

THE WINTERLY MITRE. Shell elongated, somewhat cylindrical, very finely decussated throughout; yellowish, faintly stained here and there with orange-brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Philippine Islands; Cuming.

A solid obtuse shell with the lip slightly effused.

Species 281. (Mus. Cuming.)

MITRA DÆDALA. *Mitr. testâ subfusiformi-ovatâ, spirâ turritâ; longitudinaliter costatâ, costarum interstitiis fortiter clathratis; cinereo-viridescente, zonâ albâ conspicuâ cingulatâ; columellâ quadriplicatâ.*

THE NEATLY FORMED MITRE. Shell somewhat fusiformly ovate, spire turreted; longitudinally ribbed, interstices between the ribs strongly latticed; ashy green, encircled with a conspicuous white zone; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found in sandy mud at the depth of six fathoms); Cuming.

The colour of this shell is a peculiar livid or ashy green.

Species 282. (Mus. Cuming.)

MITRA SUTURATA. *Mitr. testâ elongato-ovatâ, basi subrecurvâ, spiræ suturis profundè impressis; transversim undique angisulcatâ, sulcis profundis, puncturatis, liris intermediis subgranosis; pallidè stramineâ; columellâ quadriplicatâ.*

THE SUTURED MITRE. Shell elongately ovate, a little recurved at the base, sutures of the spire deeply impressed; transversely narrowly grooved throughout, grooves deep, punctured, intermediate ridges slightly granose; pale straw colour; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Gindulman, Island of Bohol, Philippines (found under stones at low water); Cuming.

The entire surface of this shell is encircled with close finely granulated ridges, the interstices between which are deeply grooved and punctured.

Species 283. (Mus. Cuming.)

MITRA TUSA. *Mitr. testâ ovatâ, spiræ suturis profundè impressis; longitudinaliter subtiliter costatâ, transversim impresso-striatâ; anfractuum parte superiori albidâ, maculis fuscis grandibus subquadratis ornatâ, parte inferiori totâ fuscâ; columellâ quadriplicatâ.*

THE BRUISED MITRE. Shell ovate, sutures of the spire deeply impressed, longitudinally finely ribbed, transversely impressly striated; upper part of the whorls white, ornamented with large squarish brown spots, lower part entirely brown; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puerto Galero, Island of Mindoro, Philippines (found on the sands at low water); Cuming.

Distinguished by the dark chocolate-brown spots upon the upper part of the shell, whilst the lower part is entirely stained with the same colour.

Species 284. (Mus. Cuming.)

MITRA CRENATA. *Mitr. testâ ovatâ, lineis subelevatis, subdistantibus undique cinctâ; olivaceo-fuscâ; columellâ triplicatâ.*

THE CRENATED MITRE. Shell ovate, encircled throughout with rather distant slightly elevated lines; olive-brown, columella three-plaited.

Tiara crenata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Bay of Xipixapi, West Columbia (dredged from sandy mud at the depth of six fathoms); Cuming.

A shell of very simple character though perfectly distinct from any other species.

Species 285. (Mus. Metcalfe.)

MITRA MICANS. *Mitr. testâ subfusiformi-ovatâ, lævigatâ, politâ, eburneâ, aurantio pallidè fasciatâ; columellâ quadriplicatâ.*

THE GLITTERING MITRE. Shell somewhat fusiformly ovate, smooth, polished, ivory white, faintly banded with orange; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. South Pacific Ocean.

A small white orange-banded shell with a surface as hard and shining as polished ivory.

286

257

288

289

290

291

292

293

294

295

Sowerby del et sculp.

Reeve Brothers lith. from. Copper.

MITRA.

PLATE XXXV.

(Figures moderately magnified.)

Species 286. (Mus. Cuming.)

MITRA RUBRA. *Mitr. testâ minutâ, ovatâ, basi contractâ, subrecurvâ, acutâ; anfractibus rotundatis, longitudinaliter costatis, transversim minutissimè striatis; vividè rubrâ, zonâ albâ, inter costas fusco unipunctatâ, cingulatâ; columellâ quadriplicatâ.*

THE RED MITRE. Shell minute, ovate, contracted and a little recurved at the base, spire sharp; whorls rounded, longitudinally ribbed, transversely minutely striated; bright pinkish red, encircled with a white zone marked with a single brown dot between the ribs; columella four-plaited.

Tiara rubra, Swainson (Broderip), Pro. Zool. Soc. 1835.

Hab. Lord Hood's Island, Pacific Ocean (found on *Avicula margaritifera*, at a depth of about six fathoms); Cuming.

A beautiful little semitransparent red shell.

Species 287. (Mus. Forbes.)

MITRA PHILIPPIANA. *Mitr. testâ subfusiformi-ovatâ, lævigatâ, basi liratâ; olivaceo-luteâ, anfractuum parte superiori fuscescente; columellâ quadriplicatâ.*

PHILIPPI'S MITRE. Shell somewhat fusiformly ovate, smooth, ridged at the base; olive yellow, upper part of the whorls brownish; columella four-plaited.

FORBES, British Assoc. Report, 1843, p. 140.

Hab. Ægean Sea (dredged from the depth of forty-five fathoms); Forbes.

The form of this smooth shining yellow shell is somewhat similar to that of the *Mitra Grœnlandica*.

Species 288. (Mus. Cuming.)

MITRA ARMIGER. *Mitr. testâ elongatâ, subfusiformi, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis ad angulum nodulosis, infernè evanidis; transversim impresso-striatis; rubidâ, albizonatâ, costis supernè albis; columellâ quadriplicatâ.*

THE ARMS-BEARING MITRE. Shell elongated, somewhat fusiform, spire turreted; whorls angulated at the upper part, longitudinally ribbed, ribs nodulous at the angle, fading away beneath; transversely impressly striated; reddish, variously zoned with white, uppermost part of the ribs white; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——— ?

A pretty species the sculpture of which is of a very decided character.

Species 289. (Mus. Cuming.)

MITRA CHELONIA. *Mitr. testâ ovatâ, spirâ breviusculâ, acutâ; lævigatâ; nigricante-fuscâ, zonulâ luteâ unicâ cingulatâ; columellâ triplicatâ; labro supernè sinuato.*

THE TORTOISE-STONE MITRE. Shell ovate, spire rather short, sharp; smooth; blackish-brown, encircled with a single narrow yellow zone; columella three-plaited; lip sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Burias, Philippines (dredged from sandy mud at the depth of ten fathoms); Cuming.

Belonging to that division of the genus of which the well-known *Mitra ebenus* may be regarded as the type.

Species 290. (Mus. Cuming.)

MITRA SCULPTILIS. *Mitr. testâ elongatâ, subcylindraceâ, basi paululum recurvâ, spiræ suturis subimpressis; longitudinaliter crebriliratâ, interstitiis transversim fortiter clathratis; albicante, fuscescente pallidè maculatâ, anfractus ultimi parte inferiori fuscescente, basi albicante; columellâ quinqueplicatâ.*

THE CARVED MITRE. Shell elongated, somewhat cylindrical, a little recurved at the base, sutures of the spire rather impressed; longitudinally closely ridged, interstices transversely strongly latticed; whitish, faintly spotted with pale brown, lower portion of the last whorl pale brown, whitish at the base; columella five-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

This species is well distinguished by its very closely latticed sculpture.

Species 291. (Mus. Cuming.)

MITRA SPICATA. *Mitr. testâ fusiformi, spirâ acuminato-turritâ; anfractibus longitudinaliter crebricostatis, supernè acutangulis, costis ad angulum tuberculato-nodosis, anfractu ultimo medio exiliter noduloso, costis ferè obsoletis; pallidè fulvâ; columellâ quadriplicatâ.*

THE SPIKED MITRE. Shell fusiform, spire acuminately turreted; whorls longitudinally closely ribbed, sharply angled at the upper part, ribs tubercularly noduled on the angle, last whorl faintly noduled round the middle, ribs nearly obsolete; pale fulvous colour; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found on the sands); Cuming.

The upper whorls of this shell are longitudinally finely ribbed, but there is very slight indication of ribs upon the lower.

Species 292. (Mus. Cuming.)

MITRA HEBES. *Mitr. testâ fusiformi, spirâ acuminatâ; lineis profundè impressis transversis et longitudinalibus undique creberrimè decussatâ; albicante; columellâ quadriplicatâ.*

THE DULL MITRE. Shell fusiform, spire acuminated; very closely decussated throughout with deeply impressed transverse and longitudinal lines; whitish; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The entire surface of this shell is decussated with narrow deeply cut lines.

Species 293. (Mus. Cuming.)

MITRA ANALOGICA. *Mitr. testâ ovato-oblongâ, basi contractâ, sulcatâ; spiræ anfractibus longitudinaliter plicato-costatis, anfractu ultimo lævigato; nigricante-fuscâ, zonulâ luteâ cingulatâ; columellâ triplicatâ.*

THE ANALOGOUS MITRE. Shell ovately oblong, contracted and grooved at the base; whorls of the spire longitudinally plicately ribbed, last whorl smooth; very dark brown, encircled with a narrow yellow zone; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

This species has the appearance of being the foreign analogue of the little *Mitra Savignii*, than which it is of much larger and bolder proportions.

Species 294. (Mus. Cuming.)

MITRA BILINEATA. *Mitr. testâ ovatâ, solidiusculâ, spirâ acuminatâ; longitudinaliter subobsoletè plicatâ, lævigatâ, politâ; nigerrimo-fuscâ, apicem versus albicante, lineis duabus luteis cingulatâ; columellâ quinqueplicatâ.*

THE TWO-LINE MITRE. Shell ovate, rather solid, spire acuminated; longitudinally somewhat obsoletely plicated, smooth, polished; very dark brown, whitish towards the apex, encircled with two yellow lines; columella five-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A hard, polished, blackish brown shell, encircled with two distant yellow lines

---

Species 295. (Mus. Cuming.)

MITRA CORNICULA. *Mitr. testâ oblongo-ovatâ, spirâ breviusculâ, subobtusâ, basi subtruncatâ; lævigatâ, basi impresso-striatâ; corneo-fuscescente; columellâ quadriplicatâ.*

THE HORNY MITRE. Shell oblong-ovate, spire rather short, somewhat obtuse, slightly truncated at the base; smooth, impressly striated at the base; horny brown; columella four-plaited.

DESHAYES, Anim. sans vert., vol. x. p. 324. *note.*

Voluta cornicula, Linn. (not of Schroeter, nor Gmelin.)

Mitra cornea, Lamarck.

Voluta lævigata, Gmelin.

Hab. Mediterranean and Ægean Seas (found among weed upon the shore); Forbes.

I have much pleasure in adopting M. Deshayes' name for this species, believing it to be the true *Voluta cornicula* of Linnæus.

296

297

298

299

300

301

302

303

304

305

Sowerby del. et sculp.

Reeve Brothers lith. from Copper.

MITRA.

PLATE XXXVI.

(Figures moderately magnified.)

Species 296. (Mus. Forbes.)

MITRA LITTORALIS. *Mitr. testâ subelongato-ovatâ, lævigatâ, politâ; castaneo-fuscâ, zonulâ albâ, fusco-undatâ, cingulatâ, anfractu ultimo zonulis duabus, quarum inferiori propè ad basem est; columellâ quadriplicatâ.*

THE LITTORAL MITRE. Shell somewhat elongately ovate, smooth, polished; chesnut brown, encircled with a white brown-waved zone, last whorl with two zones, the lower of which is near the base; columella four-ptaited.

FORBES, British Assoc. Report, 1843, p. 140.

Hab. Ægean Sea (found among sand on the shore); Forbes.

Resembling *Mitra granum* of the same author in its style of painting, but of a less subulate, acuminated form.

Species 297. (Mus. Cuming.)

MITRA RECURVA. *Mitr. testâ fusiformi, basi attenuatâ, subrecurvâ; longitudinaliter granoso-liratâ, transversim impresso-striatâ; rosaceo-purpurascente, fusco minutissimè hic illic punctatâ; columellâ quadriplicatâ; labro incrassato.*

THE RECURVED MITRE. Shell fusiform, attenuated at the base, a little recurved; longitudinally granosely ridged, transversely impressly striated; pinkish purple, minutely dotted here and there with brown; columella four-plaited; lip thickened.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

The minute granules with which the entire surface of this shell is longitudinally sculptured, have a semitransparent pearl-like appearance in fine specimens which is very characteristic.

The shell represented at Fig. 298, from Mr. Metcalfe's collection, proves upon a second examination to be *Mitra rubra* described in the preceding plate, Sp. 286.

Species 299. (Mus. Cuming.)

MITRA INCARNATA. *Mitr. testâ oblongo-ovatâ, spirâ brevi-usculâ, transversim elegantissimè crebriliratâ, longitudinaliter angisulcatâ; incarnatâ; columellâ sex-plicatâ; aperturâ longiusculâ.*

THE FLESH-TINTED MITRE. Shell oblong-ovate, spire rather short, transversely very elegantly closely ridged, longitudinally closely grooved; flesh-tinted; columella six-plaited; aperture rather long.

REEVE, Pro. Zool. Soc., 1845.

Hab. Cagayan, Province of Misamis, Island of Mindanao (dredged from sandy mud at the depth of five and twenty fathoms); Cuming.

The sculpture of this delicate tinted shell is extremely elaborate.

Species 300. (Mus. Cuming.)

MITRA ROSEA. *Mitr. testâ ovatâ, spirâ turritâ; anfractibus supernè subangulatis, longitudinaliter costatis, costis ad angulum muricato-nodosis aut tuberculatis, transversim fortiter elevato-striatis; roseo-purpureâ, albifasciatâ, inter costas fusco punctatâ,; columellâ quadriplicatâ; aperturæ fauce violaceâ.*

THE ROSE MITRE. Shell ovate, spire turreted; whorls slightly angulated round the upper part, longitudinally ribbed, ribs prickly noduled or tubercled at the angle, transversely strongly elevately striated; pinkish purple, banded with white, dotted with brown between the ribs; columella four-plaited; interior of the aperture violet.

Tiara rosea, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Lord Hood's Island, Pacific Ocean (found on the reefs in shallow water); Cuming.

The upper part of each rib, which is conspicuously white, is sharp and prickly in young specimens, and becomes stouter and more obtuse as the shell advances in growth.

Species 301. (Mus. Cuming.)

MITRA MILLECOSTATA. *Mitr. testâ ovatâ, solidâ, medio obesâ, utrinque abbreviato-attenuatâ; longitudinaliter creberrimè subtilissimè costellatâ, transversim impressâ, basi sulcatâ; nigro-castaneâ, apice albido; columellâ quadriplicatâ.*

THE THOUSAND-RIBBED MITRE. Shell ovate, solid, stout in the middle, shortly attenuated at each end; longitudinally very closely finely ribbed, transversely impressed, grooved at the base; very dark chesnut brown, apex white; columella four-plaited.

Tiara millecostata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs in shallow water); Cuming.

This shell, as Mr. Broderip observes, has very much the aspect of a young *Cancellaria*.

Species 302. (Mus. Norris.)

MITRA ARTICULATA. *Mitr. testâ abbreviato-fusiformi, subventricosâ; anfractibus lævibus, longitudinaliter subobsoletè plicatis, medio leviter tuberculatis; pallidè rosaceo-coccineâ, zonulâ albâ fusco-articulatâ cinctâ; columellâ quadriplicatâ.*

THE ARTICULATED MITRE. Shell shortly fusiform, somewhat ventricose; whorls smooth, longitudinally rather obsoletely plicated, slightly tubercled in the middle; pale pinkish scarlet, encircled with a small white brown-articulated zone; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

I have found no specimen approaching comparison with that here represented from the collection of Thos. Norris, Esq.

Species 303. (Mus. Cuming.)

MITRA FESTA. *Mitr. testâ pyramidali-ovatâ, longitudinaliter obtuso-costatâ, costarum interstitiis transversim cancellatis; eburneâ, anfractu ultimo fasciâ latâ olivaceo-cinereâ, fusco indistinctè punctatâ, cingulatâ; columellâ quadriplicatâ.*

THE PLEASANT MITRE. Shell pyramidally ovate, longitudinally obtusely ribbed, interstices between the ribs transversely cancellated; ivory-white, last whorl encircled with a broad olive-ash belt, indistinctly dotted with white; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puerto Galero, Island of Mindoro, Philippines (found on the sands); Cuming.

A very solid ivory white shell, encircled with a dark band which is concealed in the upper whorls by the superposition of one whorl upon the other in the ordinary course of growth.

Species 304. (Mus. Cuming.)

MITRA PINGUIS. *Mitr. testâ subobeso-ovatâ, longitudinaliter subobliquè noduloso-costatâ, transversim impresso-striatâ, striis creberrimis, anfractus ultimi parte inferiori sulcatâ; albidâ, fasciâ unicâ fuscescente cingulatâ; columellâ quadriplicatâ.*

THE PLUMP MITRE. Shell rather stoutly ovate, longitudinally somewhat obliquely nodulously ribbed, transversely impressly striated, striæ very close-set, lower portion of the last whorl grooved; whitish, encircled with a single pale brown band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puerto Galero, Island of Mindoro, Philippines; Cuming.

The last whorl of this shell exhibits a peculiarity of structure which is worthy of observation; above the brown band it is very closely impressly striated across, below it, it is merely distantly grooved. A difference between the transverse sculpture of the upper and lower portions of the whorls is rarely met with.

Species 273. (Mus. Cuming.)

MITRA PECULIARIS. *Mitr. testâ elongatâ, anfractibus lævibus, concavis, carinâ unicâ prominente supernè ornatis; albidâ, fasciâ latâ luteo-fuscescente cingulatâ; columellâ biplicatâ.*

THE PECULIAR MITRE. Shell elongated, whorls smooth, concave, ornamented with a single prominent keel round the upper part; whitish, encircled with a broad yellowish-brown band, columella two-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Puerto Galero, Island of Mindoro, Philippines (found under stones at low water); Cuming.

This species may be easily distinguished by the hollow character which is imparted to the whorls by the very prominent keel round the upper part.

306

307

308

309

310

311

312

313

314

315

Sowerby del et sculp.

Reeve Brothers lith from Copper.

MITRA.

Plate XXXVII.

(Figures moderately magnified.)

Species 306. (Mus. Metcalfe.)

Mitra roborea. *Mitr. testâ pyramidali, spirâ acuminatâ; nigricante-fuscâ, liris albidis angustis undique funiculatâ; columellâ biplicatâ, plicis subindistinctis; aperturâ parvâ.*

The oaken Mitre. Shell pyramidal, spire acuminated; blackish-brown, corded throughout with narrow white ridges; columella two-plaited, plaits somewhat indistinct; aperture small.

Reeve, Pro. Zool. Soc., 1845.

Hab. —— ?

An interesting dark brown pyramidal shell, encircled throughout with white cord-like ridges.

Species 307. (Mus. Cuming.)

Mitra Savignyi. *Mitr. testâ ovatâ, tenuiculâ, spiræ anfractibus fortiter plicato-costatis, anfractu ultimo lævigato; luteo- et viridescente-olivaceo, zonulâ albidâ cingulato; columellâ triplicatâ.*

Savigny's Mitre. Shell ovate, rather thin, whorls of the spire strongly plicately ribbed, last whorl smooth; yellowish and greenish olive, encircled with a small white zone; columella three-plaited.

Payrandeau, Cat. Moll. de Corse, p. 166. pl. 8. f. 22.

Hab. Coast of Sicily.

It seems a curious circumstance in the growth of this shell that its strong plicated structure should be wanting in the last whorl.

Species 308. (Mus. Cuming.)

Mitra semicostata. *Mitr. testâ ovatâ, spiræ anfractibus obtusè plicato-costatis, anfractu ultimo lævigato; castaneo-fuscâ, spirâ partim albâ; columellâ quadriplicatâ.*

The half-ribbed Mitre. Shell ovate, whorls of the spire obtusely plicately ribbed, last whorl smooth; chesnut-brown, spire partially white; columella four-plaited.

Anton; Küster, Conch. Cab. pl. 14. f. 20 and 21.

Hab. ——?

This species approaches very closely to the preceding, although it exhibits a very different style of painting, and merely a faint indication of the little white zone.

Species 309. (Mus. Cuming.)

Mitra radius. *Mitr. testâ gracili-fusiformi, spirâ acuminatâ, basi contractâ, subelongatâ; anfractibus longitudinaliter concentricè plicato-costatâ, interstitiis cancellatis; pallidè carneâ, anfractu ultimo fasciâ fuscescente basem versus cingulato; columellâ biplicatâ.*

The shuttle Mitre. Shell slenderly fusiform, spire acuminated, base contracted, somewhat elongated; whorls longitudinally concentrically plicately ribbed, interstices cancellated; pale flesh-colour, last whorl encircled towards the base with a pale brown band; columella two-plaited.

Reeve, Pro. Zool. Soc., 1845.

Hab. Island of Corrigidor, Philippines (found in coarse sand at the depth of seven fathoms); Cuming.

A light elegant shell in which the ribs are of a peculiarly concentric growth.

Species 310. (Mus. Cuming.)

Mitra glandiformis. *Mitr. testâ ovatâ, utrinque attenuatâ, spiræ suturis profundè impressis; longitudinaliter costatâ, costis lævibus, interstitiis profundè clathratis; cinereo-griseo alboque variegatâ, basi albicante; columellâ quadriplicatâ.*

The acorn-shaped Mitre. Shell ovate, attenuated at both ends, sutures of the spire deeply impressed; longitudinally ribbed, ribs smooth, interstices deeply latticed; variegated with white, and ashy grey, base whitish; columella four-plaited.

Reeve, Pro. Zool. Soc., 1845.

Hab. —— ?

In most examples of this species the white rather predominates.

Species 311. (Mus. Cuming.)

Mitra cineracea. *Mitr. testâ pyramidali-ovatâ, spirâ turritâ, basi subrecurvâ; anfractibus supernè angulatis, longitudinaliter costatis, costis ad angulum subnodosis, interstitiis liris parvis transversis cancellatis; cinereo-griseâ, fasciâ albidâ subinterruptâ cingulatâ, basi albidâ; columellâ quadriplicatâ; aperturâ parvâ.*

The ashy Mitre. Shell pyramidally ovate, spire turreted, base a little recurved; whorls angulated at the upper

part, longitudinally ribbed, ribs somewhat nodose at the angle, interstices cancellated with small transverse ridges; ashy grey, encircled with a rather interrupted whitish band, base whitish; columella four-plaited; aperture small.

REEVE, Pro. Zool. Soc., 1845.

Hab. Cagayan, Province of Misamis, Island of Mindanao, Philippines (found under stones at low water); Cuming.

A sharply turreted shell in which the prominent parts of the ribs are white upon a dark ashy ground.

Species 312. (Mus. Cuming.)

MITRA LIMATA. *Mitr. testâ ovatâ, crassiusculâ, spirâ mediocri; lævigatâ, politâ, transversim undique sulcatâ, sulcis puncturatis; albidâ, fasciâ fuscescente albifloccatâ cingulatâ; columellâ quadriplicatâ.*

THE POLISHED MITRE. Shell ovate, rather thick, spire middling; smooth, polished, transversely grooved throughout, grooves punctured; whitish, encircled by a pale white-flaked band; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Bohol, Philippines (found under stones on the reefs at low water); Cuming.

The grooves of this species are more deeply punctured towards the upper part of the whorls.

Species 313. (Mus. Cuming.)

MITRA EXILIS. *Mitr. testâ elongatâ, basi subrecurvâ, spirâ subobtusâ; liris minutis undique granoso-decussatâ; pallidè violaceo-purpurascente, anfractu ultimo fasciâ latâ saturatiore cingulato, infra albicante; columellâ quadriplicatâ, plicis parvis; labro incrassato.*

THE SLENDER MITRE. Shell elongated, base a little recurved, spire somewhat obtuse; granosely decussated throughout with minute ridges; pale violet purple, last whorl encircled with a dark band of the same colour, whitish beneath; columella four-plaited, plaits small; lip thickened.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

A very interesting species, with a decussated granular surface, like that of a thimble.

Species 314. (Mus. Cuming.)

MITRA MICA. *Mitr. testâ elongatâ, subcylindraceâ, basi versus contractâ; liris granulosis undique crebrimè decussatâ; fuscâ, zonâ albidâ cingulatâ; columellâ quadriplicatâ.*

THE CRUMB MITRE. Shell elongated, somewhat cylindrical, contracted towards the base; closely decussated throughout with granulated ridges; brown, encircled with a white zone; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Guimaras, Philippines (found in coarse sand at the depth of six fathoms); Cuming.

The colour of this shell is that of a dull earthy brown.

Species 315. (Mus. Cuming.)

MITRA ARMILLATA. *Mitr. testâ pyramidali, spirâ turritâ; anfractibus supernè plano-angulatis, longitudinaliter concentricè costatis, costis angustis, numerosis, ad angulum nodulosis, transversim impressis; purpureo-fuscâ, zonulâ lutescente cingulatâ; columellâ quadriplicatâ; aperturâ brevi.*

THE ARMED MITRE. Shell pyramidal, spire turreted; whorls flatly angulated at the upper part, longitudinally somewhat concentrically ribbed, ribs narrow, numerous, nodulous at the angle, transversely impressed; purple brown, encircled with a small yellowish zone; columella four-plaited; aperture short.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

A very prettily sculptured species in which the ribs are disposed somewhat concentrically.

316

317

318

319

320

321

322

323

324

325

LIBRARY OF THE ROYAL ASIATIC SOCIETY

Sowerby del. et sculp.

Reeve Brothers lith. from Copper.

MITRA.

PLATE XXXVIII.

(Figures moderately magnified.)

Species 316. (Mus. Cuming.)

MITRA TORNATELLOIDES. *Mitr. testâ rotundato-ovatâ, spirâ brevi, obtusâ; transversim undique sulcatâ, sulcis subindistinctè puncturatis; sanguineo-fuscescente, zonulâ transversâ, strigisque longitudinalibus undatis albis vividè notatâ; columellâ quadriplicatâ.*

THE TORNATELLA-LIKE MITRE. Shell rotundately ovate, spire short, obtuse; transversely grooved throughout, grooves somewhat indistinctly punctured; blood-stained brown, vividly marked with a white zone and longitudinal waved streaks; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Philippine Islands; Cuming.

This shell might easily be mistaken for a species of Tornatella, it so very much resembles that genus in form.

Species 317. (Mus. Cuming.)

MITRA GAUSAPATA. *Mitr. testâ ovatâ, spirâ subacuminatâ; anfractibus supernè plano-compressis, tuberculato-costatis, transversim undique liratis; nigerrimo-fuscâ, anfractuum areâ superâ luteâ; columellâ triplicatâ.*

THE ROUGH-MANTLED MITRE. Shell ovate, somewhat acuminated; whorls flatly compressed at the upper part, tubercularly ribbed, transversely ridged throughout; very dark blackish brown, upper area of the whorls yellow; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Gallapagos Islands (dredged from the depth of ten fathoms); Cuming.

The whorls are characterized by a narrow but peculiar depression round the upper part, beneath which they are for a short distance tubercularly ribbed.

Species 318. (Mus. Cuming.)

MITRA AMANDA. *Mitr. testâ subpyramidali, spirâ acuto-turritâ; anfractibus longitudinaliter crebricostatis, transversim impressis; fasciis angustis rubido-fuscis albisque undique cingulatâ; columellâ quadriplicatâ.*

THE BELOVED MITRE. Shell somewhat pyramidal, spire sharply turreted; whorls longitudinally closely ribbed, transversely impressed; encircled throughout with narrow white and reddish brown bands; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Islands of Burias and Negros, Philippines (found among coral sand at the depth of four fathoms); Cuming.

Encircled throughout with narrow white and reddish-brown bands.

Species 319. (Mus. Cuming.)

MITRA ANCILLIDES. *Mitr. testâ elongatâ, basi peculiariter recurvâ, transversim minutissimè elevato-striatâ, lævigatâ, politâ; pallidè fulvâ; columellâ quinqueplicatâ; aperturâ breviusculâ.*

THE ANCILLA-LIKE MITRE. Shell elongated, peculiarly recurved at the base, transversely very minutely elevately striated, smooth, polished; pale fulvous yellow; columella five-plaited; aperture rather short.

SWAINSON (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs); Cuming.

The lip of this species is somewhat effused, and the base of the columella is recurved in an abrupt and curious manner.

Species 320. (Mus. Cuming.)

MITRA CROCEA. *Mitr. testâ ovatâ, spiræ suturis impressis; anfractibus supernè plano-angulatis, longitudinaliter crebricostatis, transversim basem versus sulcatis; pallidè croceâ, aperturæ fauce aurantio tinctâ; columellâ quadriplicatâ.*

THE YELLOW MITRE. Shell ovate, sutures of the spire impressed; whorls flatly angulated at the upper part, longitudinally closely ribbed, transversely grooved towards the base; pale yellow, interior of the aperture stained with orange; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Capul, Philippines (found under stones at low water); Cuming.

Of a beautiful clear pale yellow colour, with an orange mouth.

Species 321. (Mus. Cuming.)

MITRA ROSACEA. *Mitr. testâ ovatâ, spirâ breviusculâ; liris granatis undique cingulatâ; niveâ, maculis gran-*

dibus pallidè rosaceis bifasciatim ornatâ; columellâ quinqueplicatâ; aperturâ oblongo-ovatâ, labro crenulato.

THE PINK MITRE. Shell ovate, spire rather short; encircled throughout with grained ridges; pure white, ornamented with two bands of pale pink spots; columella five-plaited; aperture oblong-ovate, lip crenulated.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Corrigidor, Philippines (found among coral sand at the depth of ten fathoms); Cuming.

An extremely delicate semi-transparent pink-stained white shell.

Species 322. (Mus. Cuming.)

MITRA MULTICOSTATA. *Mitr. testâ ovatâ, subobesâ, longitudinaliter multicostatâ, transversim basem versus sulcatâ; aurantio-rubrâ, zonulâ albicante cingulatâ; columellâ quadriplicatâ.*

THE MANY-RIBBED MITRE. Shell ovate, rather stout, longitudinally many-ribbed, transversely grooved towards the base; orange red, encircled with a small white zone; columella four-plaited.

Tiara multicostata, Swainson (Broderip), Pro. Zool. Soc., 1835.

Hab. Island of Annaa, Pacific Ocean (found on the reefs at low water); Cuming.

Belonging to a characteristic group of which the *Mitra crocata* forms one of the leading species.

Species 323. (Mus. Cuming.)

MITRA MÆSTA. *Mitr. testâ oblongo-ovatâ, transversim sulcatâ, lævigatâ; fuscescente, anfractuum parte superiori pallidè luteâ; columellâ quadriplicatâ.*

THE SAD MITRE. Shell oblong-ovate, transversely grooved, smooth; pale brown, upper part of the whorls yellow; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Corrigidor, Philippines (dredged among coral sand at the depth of ten fathoms); Cuming.

The columella and mouth of this shell are brightly enamelled.

Species 324. (Mus. Cuming.)

MITRA ÆTHIOPS. *Mitr. testâ ovatâ, crassâ, spirâ acutâ; liris parvis transversis et longitudinalibus, concentricis, undique decussatâ; nigerrimâ, vel olivaceo-nigrâ; columellâ planatâ, quadriplicatâ, callositate superne munitâ; labro planato, intus denticulato, superne sinuato.*

THE NEGRO MITRE. Shell ovate, thick, spire sharp; decussated throughout with transverse and longitudinal concentric fine ridges; very dark black, or olive black; columella flattened, four-plaited, furnished at the upper part with a callosity; lip flattened, denticulated within, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Hab. Islands of Ticao and Luzon, Philippines (found under stones at low water); Cuming.

Belonging to that interesting group of which the *Mitra Ziervogeliana* and *Woldemarii* form part.

Species 325. (Mus. Cuming.)

MITRA ZELOTYPA. *Mitr. testâ ovatâ, anfractibus superne rotundatis, longitudinaliter costatis, transversim fortiter cancellato-liratis; luteo alboque undique fasciatâ; columellâ quadriplicatâ; aperturæ fauce violascente.*

THE JEALOUS MITRE. Shell ovate, whorls rounded at the upper part, longitudinally ribbed, transversely strongly cancellately ridged; banded throughout with yellow and white; columella four-plaited; interior of the aperture pale violet.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A very distinct species from Mr. Cuming's collection, concerning which he has no information as to its locality.

326

321

328

329

330 a

330 b

331

333

332

334

Sowerby del. et sculp.

Reeve Brothers lith. from Copper.

MITRA.

PLATE XXXIX.

(Figures moderately magnified.)

Species 326. (Mus. Cuming.)

MITRA INFAUSTA. *Mitr. testâ ovatâ, solidiusculâ, longitudinaliter subundato-costatâ, transversim impresso-striatâ; incarnato-stramineâ, lineis impressis rubido-fusco hic illic exiliter tinctâ; columellâ triplicatâ.*

THE UNLUCKY MITRE. Shell ovate, rather solid, longitudinally ribbed in a waved manner, transversely impressly striated; fleshy straw colour, impressed striæ faintly stained here and there with reddish brown; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The transverse impressed striæ are chiefly stained with reddish-brown where they pass over the ribs.

Species 327. (Mus. Cuming.)

MITRA GRAJA. *Mitr. testâ ovatâ, solidâ, spirâ brevi, acuminatâ; lævigatâ, albâ, opacâ, epidermide luteâ indutâ; columellâ triplicatâ.*

THE GRECIAN MITRE. Shell ovate, solid, spire short, acuminated; smooth, opake white, covered with a yellowish epidermis; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Paros, Grecian Archipelago; Miller, R. N.

A stout solid shell of a peculiar opake marble white, covered with a yellow epidermis.

Species 328. (Mus. King of Denmark.)

MITRA CANDIDA. *Mitr. testâ ovatâ, subfusiformi, transversim crebriliratâ, lirarum interstitiis longitudinaliter subtilissimè striatis; candidâ; columellâ triplicatâ.*

THE WHITE MITRE. Shell ovate, somewhat fusiform, transversely closely ridged, interstices between the ridges very finely longitudinally striated; white; columella three-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. La Guayra, South America.

A white closely ridged species in the collection of H. M. the King of Denmark, by whose permission it has been forwarded to me for illustration.

Species 329. (Mus. Cuming.)

MITRA RUSTICA. *Mitr. testâ oblongo-ovatâ, spirâ turritâ; anfractibus supernè angulatis, longitudinaliter costatis, costis subdistantibus, ad angulum muricato-tuberculatis, transversim puncturatis; albidâ, infernè cinereâ; columellâ quadriplicatâ.*

THE RUSTIC MITRE. Shell oblong-ovate, spire turreted; whorls angulated at the upper part, longitudinally ribbed, ribs rather distant, prickly tubercled on the angle, transversely punctured; whitish, lower part of the shell ash-colour; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The upper edge of the ash-colour is slightly marked between the ribs with one or two brown dots.

Species 330. (Fig. *a* and *b*, Mus. Cuming.)

MITRA CORALLINA. *Mitr. testâ subfusiformi, politâ, basi subrecurvâ; anfractibus transversim obsoletè striatis, longitudinaliter plicato-costatis; electro- vel corallio-rubrâ, costis albicantibus; columellâ quadriplicatâ.*

THE CORAL MITRE. Shell somewhat fusiform, polished, a little recurved at the base; whorls transversely obsoletely striated, longitudinally plicately ribbed; amber or coral red, ribs whitish; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Masbate, Philippines (found on the sands); Cuming.

This is a beautiful species, some examples having the appearance of bright amber, whilst others look like red, coral.

Species 331. (Mus. Cuming.)

MITRA LUBENS. *Mitr. testâ elongatâ, subfusiformi, basi contractâ, spirâ turritâ; anfractibus supernè angulatis, liris parvis longitudinalibus et transversis creberrimè clathratis; albidâ, apice basique rosaceis; columellâ quadriplicatâ.*

THE MERRY MITRE. Shell elongated, somewhat fusiform, contracted at the base, spire turreted; whorls angulated at the upper part, very closely latticed with small transverse and longitudinal ridges; whitish, apex and base pink; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The ridges of this very delicate and pretty shell are slightly nodulous and prickly on the angle.

Species 332. (Mus. Cuming.)

MITRA TABANULA. *Mitr. testâ ovatâ, subobesâ, liris elevatiusculis carinæformibus undique cingulatâ, interstitiis longitudinaliter striatis; fusco-rubente; columellâ quadriplicatâ.*

THE LITTLE OX-FLY MITRE. Shell ovate, rather stout, encircled throughout with rather elevated keel-like ridges, the interstices between which are striated longitudinally; brownish-red; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol.x. p.341.

Hab. Philippine Islands, &c.

This species may be distinguished from the young of the *Mitra cucumerina*, which might easily be mistaken for it, by its strong keel-like transverse ridges.

Species 333. (Mus. Cuming.)

MITRA PATULA. *Mitr. testâ ovatâ, tenuiculâ, ventricosiusculâ, lævigatâ; cinereâ, fusco hic illic variegatâ et nebulatâ; columellâ quadriplicatâ; aperturâ ampl. labro tenui, supernè sinuato.*

THE WIDE-MOUTH MITRE. Shell ovate, rather thin, slightly ventricose, smooth; ash-colour, variegated and clouded here and there with brown; columella four-plaited; aperture large, lip thin, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

Very distinct from any species I have met with.

Species 334. (Mus. Norris.)

MITRA ALVEOLUS. *Mitr. testâ abbreviato-ovatâ, spiræ suturis profundè impressis; longitudinaliter subtiliter plicato-costatâ, basi transversim sulcatâ; aperturâ intùs infernè aterrimis, supernè albis, nigro tessellatis; columellâ quadriplicatâ.*

THE CHESS-BOARD MITRE. Shell shortly ovate, sutures of the spire deeply impressed; longitudinally finely plicately ribbed, transversely grooved at the base; whorls jet black round the lower part, white above, tessellated with black; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

An interesting species from the cabinet of Thos. Norris, Esq., to the value of whose magnificent collection of Mitres this monograph of the genus bears ample testimony.

MITRA.

[*Temporary Index.*]

	Plate	Species
abbatis, *Chemnitz*	XIII.	91
acuminata, *Swainson*	XX.,	158
acupicta, *Reeve*	XI.	76
Adamsoni, *Gray*	XIX.	150
adusta, *Lamarck*	IV.	25
ægra, *Reeve*	XXXI.	252
Æthiops, *Reeve*	XXXVIII.	324
affinis, *Reeve*	XXVI.	211
alveolus, *Reeve*	XXXIX.	334
amabilis, *Reeve*	XXXIII.	274
amanda, *Reeve*	XXXVIII.	318
ambigua, *Swainson*	II.	8
amphorella, *Lamarck*	XII.	85
analogica, *Reeve*	XXXV.	293
Ancillides, *Swainson*	XXXVIII.	319
angulosa, *Küster*	XXVIII.	223
annulata, *Reeve*	XIV.	103
anthracina, *Reeve*	XVIII.	137
arenosa, *Lamarck*	XXI.	161
armiger, *Reeve*	XXXV.	288
armillata, *Reeve*	XXXVII.	315
articulata, *Reeve*	XXXVI.	302
astricta, *Reeve*	XXIV.	188
attenuata, *Reeve*	XVI.	124
aurantia, *Deshayes*	XXIII.	182
aurantiaca, Lamarck	XXIII.	182
aureolata, *Reeve*	XXVI.	210
Auriculoides, *Reeve*	XXVIII.	228
australis, *Swainson*	XVI.	118
avenacea, *Reeve*	XXXI.	246
bacillum, *Lamarck*	XVI.	117
badia, *Reeve*	XX.	157
balteolata, *Reeve*	VIII.	54
Belcheri, *Hinds*	XIII.	93
bifasciata, Swainson	III.	20
bilineata, *Reeve*	XXXV.	294
Bovei, *Kiener*	XI.	78
brumalis, *Reeve*	XXXIV.	280
buccinata, Quoy	VI.	43
Bulimoides, *Reeve*	XXVIII.	224
cadaverosa, *Reeve*	XXI.	160
cælata, *Reeve*	XXXII.	265
cæligena, *Reeve*	XXVIII.	227
cærulea, *Reeve*	XV.	113
caffra, *Lamarck*	III.	20
caliginosa, *Reeve*	XVI.	121
callosa, *Reeve*	XXXI.	251
Cancellarioides, Anton	XXV.	196
cancellata, *Swainson*	VI.	39
candida, *Reeve*	XXXIX.	328
Capensis, *Dunker*	XXXIII.	268
carbonacea, *Reeve*	XXVII.	217
carbonaria, Swainson	V.	33
cardinalis, *Gronovius*	IV.	26
carinata, *Swainson*	XXI.	163
carnicolor, *Reeve*	XXI.	164
casta, *Lamarck*	VI.	40
catenata, *Reeve*	XXXII.	259
cavea, *Reeve*	XIX.	149
chalybeia, *Reeve*	IX.	59
chelonia, *Reeve*	XXXV.	289
Chilensis, Kiener	V.	34
Chinensis, *Gray*	V.	36
choava, *Reeve*	XVIII.	135
chrysalis, *Reeve*	XXV.	200
chrysostoma, *Swainson*	II.	12
cimelium, *Reeve*	XXXII.	260
cinctella, *Lamarck*	IX.	63
cineracea, *Reeve*	XXXVII.	311
circulata, *Kiener*	XI.	77
cithara, *Reeve*	XXXI.	248
citrina, *Reeve*	XXVII.	215
clandestina, *Reeve*	XXXII.	263
clathrata, *Reeve*	X.	71
coarctata, *Swainson*	XIX.	145
coccinea, *Reeve*	VII.	49
Columbellæformis, *Kiener*	XVIII.	138
concentrica, *Reeve*	XVII.	128
concinna, *Reeve*	XXVI.	203
conica, *Deshayes*	XXVII.	216
conovula, Quoy	XXVII.	212
consanguineus, *Reeve*	XXX.	241
contracta, Swainson	XIII.	91
conulus, Lamarck	XII.	83
Conus, *Reeve*	XII.	83
corallina, *Reeve*	XXXIX.	330
coriacea, *Reeve*	XXIX.	231
cornea, Lamarck	XXXV.	295
cornicula, *Deshayes*	XXXV.	295
cornicularis, Lamarck	XXI.	167
coronata, *Lamarck*	XIV.	104
corrugata, *Lamarck*	IX.	57

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Ticao, Philippines (found under stones at low water); Cuming.

The ridges of this very delicate and pretty shell are slightly nodulous and prickly on the angle.

Species 332. (Mus. Cuming.)

MITRA TABANULA. *Mitr. testâ ovatâ, subobesâ, liris elevatiusculis carinæformibus undique cingulatâ, interstitiis longitudinaliter striatis; fusco-rubente; columellâ quadriplicatâ.*

THE LITTLE OX-FLY MITRE. Shell ovate, rather stout, encircled throughout with rather elevated keel-like ridges, the interstices between which are striated longitudinally; brownish-red; columella four-plaited.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol.x. p.341.

Hab. Philippine Islands, &c.

This species may be distinguished from the young of the *Mitra cucumerina*, which might easily be mistaken for it, by its strong keel-like transverse ridges.

Species 333. (Mus. Cuming.)

MITRA PATULA. *Mitr. testâ ovatâ, tenuiculâ, ventricosiusculâ, lævigatâ; cinereâ, fusco hic illic variegatâ et nebulatâ; columellâ quadriplicatâ; aperturâ amplâ, labro tenui, supernè sinuato.*

THE WIDE-MOUTH MITRE. Shell ovate, rather thin, slightly ventricose, smooth; ash-colour, variegated and clouded here and there with brown; columella four-plaited; aperture large, lip thin, sinuated at the upper part.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

Very distinct from any species I have met with.

Species 334. (Mus. Norris.)

MITRA ALVEOLUS. *Mitr. testâ abbreviato-ovatâ, spiræ suturis profundè impressis; longitudinaliter subtiliter plicato-costatâ, basi transversim sulcatâ; anfractibus infernè aterrimis, supernè albis, nigro tessellatis; columellâ quadriplicatâ.*

THE CHESS-BOARD MITRE. Shell shortly ovate, sutures of the spire deeply impressed; longitudinally finely plicately ribbed, transversely grooved at the base; whorls jet black round the lower part, white above, tessellated with black; columella four-plaited.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

An interesting species from the cabinet of Thos. Norris, Esq., to the value of whose magnificent collection of Mitræ this monograph of the genus bears ample testimony.

MITRA.

[*Temporary Index.*]

	Plate	Species
abbatis, *Chemnitz*	XIII.	91
acuminata, *Swainson*	XX.	158
acupicta, *Reeve*	XI.	76
Adamsoni, *Gray*	XIX.	150
adusta, *Lamarck*	IV.	25
ægra, *Reeve*	XXXI.	252
Æthiops, *Reeve*	XXXVIII.	324
affinis, *Reeve*	XXVI.	211
alveolus, *Reeve*	XXXIX.	334
amabilis, *Reeve*	XXXIII.	274
amanda, *Reeve*	XXXVIII.	318
ambigua, *Swainson*	II.	8
amphorella, *Lamarck*	XII.	85
analogica, *Reeve*	XXXV.	293
Ancillides, *Swainson*	XXXVIII.	319
angulosa, *Küster*	XXVIII.	223
annulata, *Reeve*	XIV.	103
anthracina, *Reeve*	XVIII.	137
arenosa, *Lamarck*	XXI.	161
armiger, *Reeve*	XXXV.	288
armillata, *Reeve*	XXXVII.	315
articulata, *Reeve*	XXXVI.	302
astricta, *Reeve*	XXIV.	188
attenuata, *Reeve*	XVI.	124
aurantia, *Deshayes*	XXIII.	182
aurantiaca, Lamarck	XXIII.	182
aureolata, *Reeve*	XXVI.	210
Auriculoides, *Reeve*	XXVIII.	228
australis, *Swainson*	XVI.	118
avenacea, *Reeve*	XXXI.	246
bacillum, *Lamarck*	XVI.	117
badia, *Reeve*	XX.	157
balteolata, *Reeve*	VIII.	54
Belcheri, *Hinds*	XIII.	93
bifasciata, Swainson	III.	20
bilineata, *Reeve*	XXXV.	294
Bovei, *Kiener*	XI.	78
brumalis, *Reeve*	XXXIV.	280
buccinata, Quoy	VI.	43
Bulimoides, *Reeve*	XXVIII.	224
cadaverosa, *Reeve*	XXI.	160
cælata, *Reeve*	XXXII.	265
cæligena, *Reeve*	XXVIII.	227
cærulea, *Reeve*	XV.	113
caffra, *Lamarck*	III.	20
caliginosa, *Reeve*	XVI.	121
callosa, *Reeve*	XXXI.	251
Cancellarioides, Anton	XXV.	196
cancellata, *Swainson*	VI.	39
candida, *Reeve*	XXXIX.	328
Capensis, *Dunker*	XXXIII.	268
carbonacea, *Reeve*	XXVII.	217
carbonaria, Swainson	V.	33
cardinalis, *Gronovius*	IV.	26
carinata, *Swainson*	XXI.	163
carnicolor, *Reeve*	XXI.	164
casta, *Lamarck*	VI.	40
catenata, *Reeve*	XXXII.	259
cavea, *Reeve*	XIX.	149
chalybeia, *Reeve*	IX.	59
chelonia, *Reeve*	XXXV.	289
Chilensis, Kiener	V.	34
Chinensis, *Gray*	V.	36
choava, *Reeve*	XVIII.	135
chrysalis, *Reeve*	XXV.	200
chrysostoma, *Swainson*	II.	12
cimelium, *Reeve*	XXXII.	260
cinctella, *Lamarck*	IX.	63
cineracea, *Reeve*	XXXVII.	311
circulata, *Kiener*	XI.	77
cithara, *Reeve*	XXXI.	248
citrina, *Reeve*	XXVII.	215
clandestina, *Reeve*	XXXII.	263
clathrata, *Reeve*	X.	71
coarctata, *Swainson*	XIX.	145
coccinea, *Reeve*	VII.	49
Columbellæformis, *Kiener*	XVIII.	138
concentrica, *Reeve*	XVII.	128
concinna, *Reeve*	XXVI.	203
conica, *Deshayes*	XXVII.	216
conovula, Quoy	XXVII.	212
consanguineus, *Reeve*	XXX.	241
contracta, Swainson	XIII.	91
conulus, Lamarck	XII.	83
Conus, *Reeve*	XII.	83
corallina, *Reeve*	XXXIX.	330
coriacea, *Reeve*	XXIX.	231
cornea, Lamarck	XXXV.	295
cornicula, *Deshayes*	XXXV.	295
cornicularis, Lamarck	XXI.	167
coronata, *Lamarck*	XIV.	104
corrugata, *Lamarck*	IX.	57

	Plate	Species
costellaris, *Lamarck*	IX.	58
crassa, *Swainson*	II.	7
crebrilirata, *Reeve*	XIII.	92
cremans, *Reeve*	XXX.	242
crenata, *Reeve*	XXXIV.	284
crenifera, *Lamarck*	VI.	38
crenulata, *Lamarck*	XXIV.	190
crocata, *Lamarck*	XXVI.	206
crocea, *Reeve*	XXXVIII.	320
cruentata, *Reeve*	XVII.	126
cucumerina, *Lamarck*	XXV.	201
Cumingii, *Reeve*	X.	67
cylindracea, *Reeve*	XIII.	97
dactylus, *Lamarck*	XII.	88
dædala, *Reeve*	XXXIV.	281
declivis, *Reeve*	VI.	44
decora, *Reeve*	XXIX.	234
decurtata, *Reeve*	XX.	154
Defrancii, *Payrandeau*	XXI.	159
Dennisoni, *Reeve*	III.	14
dermestina, *Lamarck*	XIX.	143
Deshayesii, *Reeve*	XXII.	170
diadema, Swainson	III.	19
digitalis, *Reeve*	III.	21
discoloria, *Reeve*	XXIX.	230
duplilirata, *Reeve*	XXIX.	229
Dupontiæ, Kiener	I.	1
ebenus, *Lamarck*	XX.	151
effusa, *Swainson*	XIV.	100
elegans, *Reeve*	XXIX.	233
episcopalis, *Argenville*	I.	5
exasperata, *Deshayes*	XXI.	162
exilis, *Reeve*	XXXVII.	313
fasciata, Martyn	VI.	40
fastigium, *Reeve*	XXVIII.	221
fenestrata, *Lamarck*	XXIV.	189
ferruginea, *Lamarck*	IV.	28
festa, *Reeve*	XXXVI.	303
ficulina, *Lamarck*	XVIII.	141
filosa, *Lamarck*	XI.	81
filum, *Reeve*	XXVII.	218
fissurata, *Lamarck*	V.	30
flammea, *Quoy*	XVI.	120
flammigera, *Reeve*	XXII.	173
flavescens, *Reeve*	XXVI.	207
floccata, *Reeve*	III.	16
foraminata, Swainson	I.	1
forticostata, *Reeve*	XXX.	238
fraga, Kiener	XXV.	196
fulgetrum, *Reeve*	XVI.	115
fulgurita, *Reeve*	IX.	61

	Plate	Species
fulva, *Swainson*	IV.	24
fulvescens, *Reeve*	XXXI.	255
funerea, *Reeve*	XV.	108
funiculata, *Reeve*	XVI.	122
fusca, *Reeve*	XV.	110
fusiformis, *Kiener*	XVII.	132
gausapata, *Reeve*	XXXVIII.	317
gigantea, *Swainson*	IV.	27
glabra, *Swainson*	VI.	43
glandiformis, *Reeve*	XXXVII.	310
glans, *Reeve*	XXIV.	192
gracilis, *Reeve*	V.	31
Graja, *Reeve*	XXXIX.	327
granata, *Reeve*	XXXIII.	271
granatina, Lamarck	V.	35
granosa, Chemnitz	III.	15
granulosa, *Lamarck*	IX.	62
granum, *Forbes*	XXXII.	261
gratiosa, *Reeve*	XXXIV.	277
Grœnlandica, *Gray*	XV.	106
Gruneri, *Reeve*	XVI.	119
guttata, *Swainson*	X.	69
harpæformis, Lamarck	XVII.	126
hebes, *Reeve*	XXXV.	292
Hindsii, *Reeve*	XXI.	165
histrio, *Reeve*	XIX.	144
ignobilis, *Reeve*	XX.	152
impressa, *Anton*	XXXI.	250
incarnata, *Reeve*	XXXVI.	299
inermis, *Reeve*	XXXIV.	279
infausta, *Reeve*	XXXIX.	326
infecta, *Reeve*	XI.	75
inquinata, *Reeve*	V.	29
interlirata, *Reeve*	X.	70
intermedia, *Kiener*	IX.	60
isabella, *Reeve*	VI.	42
lachryma, *Reeve*	XXXII.	258
lactea, *Lamarck*	XIII.	90
lacunosa, *Reeve*	X.	65
Lamarckii, *Deshayes*	IV.	25
latruncularia, *Reeve*	XXI.	160
lauta, *Reeve*	XXX.	24
lens, *Reeve*	I.	
leucodesma, *Reeve*	XXX.	24
lignaria, *Reeve*	IX.	
limata, *Reeve*	XXXVII.	3
limbifera, *Lamarck*	XXIII.	1
lineata, *Reeve*	XVII.	1
literata, *Lamarck*	XX.	1
littoralis, *Forbes*	XXXVI.	2
livida, *Reeve*	XVIII.	1

	Plate	Species
loricata, *Reeve*	XXII.	174
lota, *Reeve*	XXX.	239
lubens, *Reeve*	XXXIX.	331
lucida, *Reeve*	XXXIII.	266
luculenta, *Reeve*	XXX.	245
lugubris, *Swainson*	X.	72
lutea, Quoy	XX.	158
lyrata, *Lamarck*	VII.	46
maculosa, *Reeve*	XXII.	175
mæsta, *Reeve*	XXXVIII.	323
marmorata, Schubert	XXVII.	216
maura, Swainson	V.	34
melaleuca, Quoy	XVI.	118
Melaniana, Lamarck	V.	33
melongena, *Lamarck*	VII.	47
mica, *Reeve*	XXXVII.	314
micans, *Reeve*	XXXIV.	285
microzonias, *Lamarck*	XXIV.	185
militaris, *Reeve*	XXIX.	236
milium, *Reeve*	XXXII.	257
millecostata, *Reeve*	XXXVI.	301
millepora, Lamarck	III.	21
mirifica, *Reeve*	XXXIV.	278
modesta, *Reeve*	XXXI.	254
mucronata, *Reeve*	XVII.	125
multicostata, *Reeve*	XXXVIII.	322
muricata, *Reeve*	XXXI.	253
muriculata, *Lamarck*	XXVI.	205
mutabilis, *Reeve*	XXIX.	235
nanus, *Reeve*	XXIV.	194
nebulosa, *Swainson*	I.	3
nexilis, Martyn	XI.	81
nigra, *Reeve*	V.	33
nigra, Quoy	XV.	109
nitens, Kiener	XIV.	103
nivea, *Reeve*	VI.	41
nodosa, *Reeve*	XXV.	196
Norrisii, *Reeve*	I.	6
nucea, *Reeve*	XII.	86
nucleola, *Lamarck*	XXVIII.	226
nympha, *Reeve*	XXXI.	249
obeliscus, *Reeve*	XV.	107
obesa, *Reeve*	XII.	87
ocellata, *Swainson*	XI.	74
oleacea, *Reeve*	XIV.	105
olivaria, Lamarck	XII.	86
Olivæformis, *Reeve*	XXVII.	212
orientalis, *Gray*	V.	34
ornata, Kiener	XXV.	198
ossea, *Reeve*	XXVII.	219
Pacifica, *Reeve*	XXXIII.	272
papalis, *Lamarck*	II.	9
pardalis, *Küster*	XXX.	240
patriarchalis, *Lamarck*	XIX.	146
patula, *Reeve*	XXXIX.	333
pàupercula, *Lamarck*	XII.	84
peculiaris, *Reeve*	XXXVI.	305
pediculus, *Lamarck*	XXXII.	264
pellis-serpentis, *Reeve*	X.	66
Peronii, Lamarck	XXIII.	182
peregra, *Reeve*	XXIV.	186
pertusa, Swainson	IV.	26
Philippiana, *Forbes*	XXXV.	287
pica, *Reeve*	XXXI.	247
picta, *Reeve*	XVI.	123
pinguis, *Reeve*	XXXVI.	304
planilirata, *Reeve*	XXIII.	184
plicata, *Lamarck*	VIII.	56
plumbea, *Lamarck*	XX.	156
polita, *Reeve*	XIII.	94
pontificalis, *Lamarck*	IV.	23
porcata, *Humphrey*	XXIV.	187
porphyretica, *Reeve*	XXV.	195
pretiosa, *Reeve*	XVI.	116
proscissa, *Reeve*	XXII.	177
pruinosa, *Reeve*	XXII.	171
puella, *Reeve*	XXXIV.	276
pulchella, *Reeve*	XIX.	142
pullata, *Reeve*	XIV.	102
punctata, Deshayes	XXVII.	219
punctata, *Swainson*	XXI.	168
puncticulata, *Lamarck*	III.	19
purpurata, *Reeve*	XXXIII.	275
pyramidalis, *Reeve*	XXVI.	208
Quoyi, *Deshayes*	XV.	109
radius, *Reeve*	XXXVII.	309
recurva, *Reeve*	XXXVI.	297
regina, *Sowerby*	VII.	48
retusa, *Lamarck*	XXV.	199
rhodia, *Reeve*	XXVIII.	225
rigida, *Swainson*	XXII.	169
roborea, *Reeve*	XXXVII.	306
robusta, *Reeve*	XVIII.	140
rosacea, *Reeve*	XXXVIII.	321
rosea, *Reeve*	XXXVI.	300
rosea, Duclos	XI.	79
Rossiæ, *Reeve*	XXV.	198
rotundilirata, *Reeve*	XXIII.	178
rubiginosa, *Reeve*	X.	68
rubra, *Reeve*	XXXV.	286
rubricata, *Reeve*	XVII.	130
rubritincta, *Reeve*	XIX.	147

	Plate	Species
rugosa, *Sowerby*	XIV.	101
rupicola, *Reeve*	VIII.	53
Rüppellii, *Reeve*	XXIII.	179
rustica, *Reeve*	XXXIX.	329
sanguinolenta, Lamarck	I.	2
sanguisuga, *Lamarck*	XIV.	99
Santangeli, Maravigna	III.	17
Savignii, *Payrandeau*	XXXVII.	307
scabriuscula, *Gray*	V.	35
scabriuscula, Lamarck	V.	37
Schroeteri, *Deshayes*	XXI.	167
sculptilis, *Reeve*	XXXV.	290
scutulata, *Lamarck*	XII.	82
semen, *Reeve*	XXXII.	256
semicostata, *Anton*	XXXVII.	308
semifasciata, *Lamarck*	XVII.	131
semiferruginea, *Jonas*	XXVIII.	222
Senegalensis, *Reeve*	XVII.	129
serpentina, *Lamarck*	XV.	112
Sinensis, *Reeve*	XXIV.	191
Solandri, *Reeve*	XXII.	172
solida, *Reeve*	III.	18
solidula, *Reeve*	XVIII.	133
speciosa, *Reeve*	XIX.	148
sphærulata, *Martyn*	V.	37
spicata, *Reeve*	XXXV.	291
Stainforthii, *Reeve*	III.	13
stigmataria, *Lamarck*	III.	15
striata, Gray	XXXI.	255
striatula, *Lamarck*	XIII.	96
strigata, *Swainson*	V.	32
subdivisa, *Lamarck*	VII.	46
subulata, *Lamarck*	XI.	79
sulcata, *Kiener*	XXII.	176
suturata, *Reeve*	XXXIV.	282
Swainsoni, *Broderip*	I.	4
tabanula, *Lamarck*	XXXIX.	332
tæniata, *Lamarck*	VIII.	52
elescopium, *Reeve*	XX.	80
erebralis, *Lamarck*	II.	11
tessellata, *Martyn*	II.	10
tessellata, Kiener	XVI.	123
tessellata, Swainson	XXV.	198
testacea, *Swainson*	XIV.	98
texturata, *Lamarck*	XX.	155
Ticaonica, *Reeve*	XXIII.	181
tornata, *Reeve*	XXXIII.	269
Tornatelloides, *Reeve*	XXXVIII.	316
torulosa, Lamarck	XXI.	162
tristis, *Swainson*	XV.	114
tuberculata, Kiener	XXV.	196
tuberosa, *Reeve*	XXX.	237
tumida, *Reeve*	VIII.	51
turben, *Reeve*	XXVII.	213
turgida, *Reeve*	XXXIII.	273
turriger, *Reeve*	XXXII.	262
tusa, *Reeve*	XXXIV.	283
typha, *Reeve*	XXXIII.	267
undulosa, *Reeve*	XXIV.	193
ustulata, *Reeve*	XIII.	89
Vanikorensis, *Quoy*	XXVII.	220
variabilis, *Reeve*	XIII.	95
variata, *Reeve*	XXVI.	209
variegata, *Reeve*	XV.	111
venustula, *Reeve*	XXVI.	204
versicolor, *Martyn*	I.	2
verrucosa, *Reeve*	XXIX.	232
vexillum, *Reeve*	XXIII.	183
virgata, *Reeve*	XXV.	197
virgo, *Reeve*	XXVII.	214
vittata, *Swainson*	VII.	50
vitulina, Dillwyn	IV.	28
vulpecula, *Lamarck*	VIII.	55
vultuosa, *Reeve*	XXXIII.	270
Woldemarii, *Kiener*	XVIII.	139
zebra, Lamarck	XII.	84
Zebuensis, *Reeve*	X.	73
zelotypa, *Reeve*	XXXVIII.	313
Ziervogeliana, *Kiener*	XVIII.	136
zonata, *Marryatt*	III.	11

ERRATA.

Species 45, for *Mitra attenuata* read *Mitra fulva, var.*
Species 109, for *Mitra nigra*, Quoy, read *Mitra Quoyi*, Deshayes.
Species 130, for *Mitra impressa* read *Mitra rubricata.*
Species 209, for *Mitra speciosa* read *Mitra variata.*
PLATE XXXVI., *for* Species 273, *read* Species 305.

MONOGRAPH

OF THE GENUS

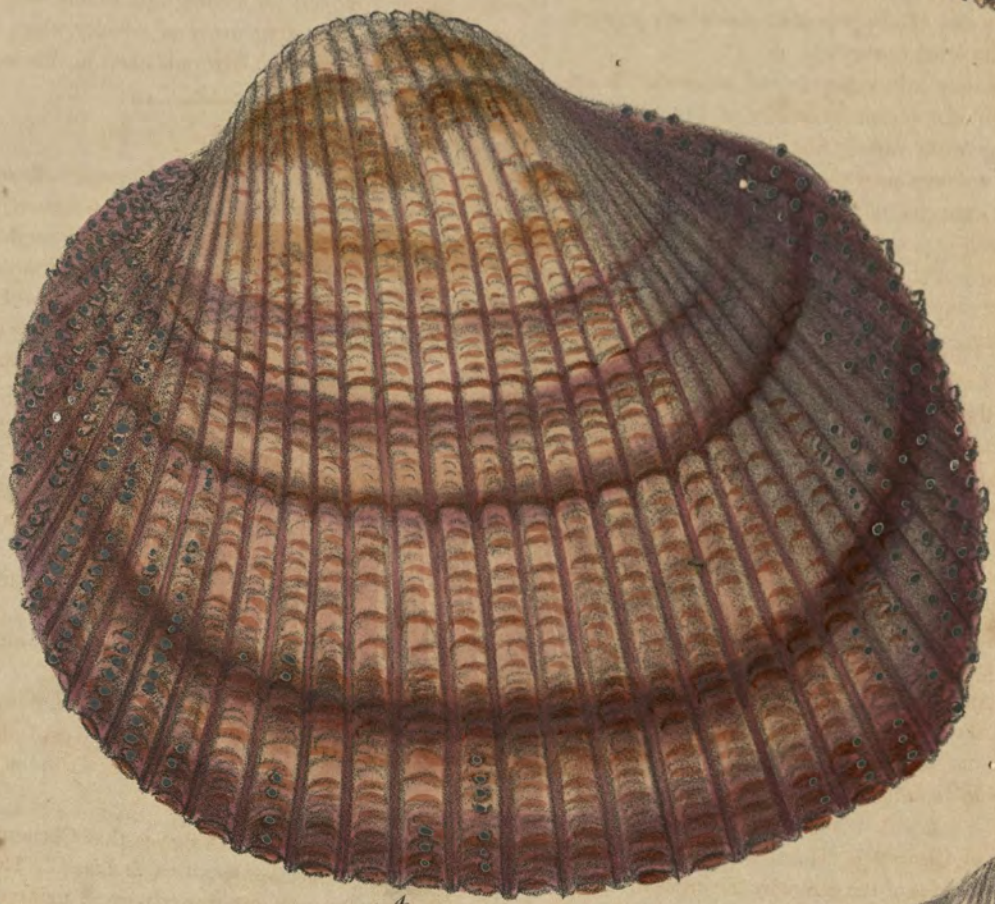
CARDIUM.

"These in their dark nativity the deep,
With heaven's ray, and tempered, they shoot forth
So beauteous, opening to the ambient light." —*Milton.*

1

2

3



4

5

7

6

CARDIUM.

PLATE I.

Genus CARDIUM, Linnæus.

Testa æquivalvis, plus minusve inæquilateralis, subcordata, umbonibus prominulis, latere postico interdum hiante; plerumque costata, costis ab umbonibus symmetricè divergentibus, sæpissimè squamatis aut spinosis; valvarum marginibus crenulatis, interclaudentibus. Cardo: dentibus in utrâque valvâ quatuor, duobus centralibus, obliquis, approximatis, cruciatim intersertis, duobus lateralibus, remotis. Pallii impressio muscularis integra. Ligamentum breve, externum.

Shell equivalve, more or less inequilateral, somewhat heart-shaped, umbones prominent, posterior side sometimes gaping; generally ribbed, ribs diverging symetrically from the umbones, most frequently armed with scales or spines; margins of the valves crenulated, interclosing with each other. Hinge: four teeth in each valve, two central, oblique, approximated, interserted cross-wise; two lateral, remote. Muscular impression of the mantle entire. Ligament short, external.

The genus *Cardium* is one of the very few established by Linnæus that remains entire; the species, which are somewhat numerous, exhibit a great similarity of form throughout, and may be generally recognised by their cordiform shape, and the prominent developement of the umbones. The most characteristic variation in form occurs in those species which Cuvier distinguished by the new title of *Hemicardium*, such as the *Cardium hemicardium, fragum, retusum, auriculatum*, &c., but the difference cannot for a moment be regarded of any particular generic importance. Another variation worthy of mention, because it seems to indicate a difference in the characters of the animal inhabitant, may be observed in those species which, like the *Cardia bullatum* and *apertum* gape more or less at the sides.

The hinge of *Cardium* is defined with great peculiarity in the typical species of the genus by the cross interlocking of the central, and the remote arrangement of the lateral teeth; but, in the aberrant species, it becomes modified to a degree which has induced Dr. Eichwald of Moscow, in his "Fauna Caspio-Caucasia," to subdivide the genus into the four following subgenera, founded on certain peculiar modifications in the developement of the teeth; *Cardium*, *Didacna*, *Monodacna* and *Adacna*. I do not conceive, however, that these groups can be admitted on the same principal which separates, as says Dr. Eichwald, the *Uniones* and *Anadontes*; for the teeth of the *Uniones* alone exhibit as great a variation of character as those of the *Cardia*. Some, as in the learned doctor's subgenus *Didacna*, have only half the usual number of central teeth developed; other species there are, like the *Monodacnæ*, in which the lateral teeth are obsolete; whilst the hinge of several species, as in *Adacna*, are almost edentulate.

The chief portion of the genus *Cardium* has been so well illustrated by Mr. Sowerby in his 'Conchological Illûstrations,' that little remains for me but to complete the monograph as a whole. Some few additional species have presented themselves, but the monograph cannot be expected to exhibit that interesting array of novelty which has accompanied the genera hitherto published in this work.

Species 1. (Mus. Cuming.)

CARDIUM SERRATUM. *Card. testâ ovatâ, umbones versus gibbosiusculâ, glabrâ, nitidulâ, anticè subobsoletè striatâ; albido-flavicante, latere postico vividè citrino-flavido aut roseo-purpurascente, maculis flavido-purpurascentibus undatis circa umbones pallidè tinctâ, intus sub umbonibus flavescente; marginibus intus minutissimè serratis.*

THE SERRATED COCKLE. Shell ovate, rather gibbous towards the umbones, smooth, shining, anteriorly rather obsoletely striated; whitish yellow, posterior side bright citron yellow or pinkish purple, palely stained with pinkish-waved spots around the umbones, interior yellowish under the umbones; margins very minutely serrated within.

LINNÆUS (not of Gmelin), Syst. Nat. 12th edit. no. 89. p. 1123.

Cardium citrinum serratum Linnæi, Chemnitz, Conch. Cab. vol. vi. p. 194. pl. 18. f. 189.

Cardium lævigatum, Gmelin, Lamarck, Sowerby.

Hab. Islands of Nevis and St. Vincent, West Indies (found in sandy mud at the depth of from six to ten fathoms); Guilding.

I quite agree with M. Deshayes that Chemnitz "*a très bien reconnu le Cardium serratum de Linné.*" The recorded opinions of Lamarck and Sowerby were induced probably by an error of Gmelin's, followed by Bruguière, in the Encyclopédie Méthodique.

Species 2. (Mus. Cuming.)

CARDIUM INCARNATUM. *Card. testâ gibboso-globosâ, longitudinaliter costatâ, costis quatuor et viginti, rotundis, complanatis, margines versus medio obsoletè brevispinosis, interstitiis angustis, subprofundis, transversim striatis; pallidè incarnatâ, radiis roseis transversis hic illic ornatâ.*

THE FLESH-TINTED COCKLE. Shell gibbously globose, longitudinally ribbed, ribs about four and twenty in number, round, smooth, obsoletely short-spined in the middle towards the margins, interstices narrow, rather deep, transversely striated; pale flesh colour, ornamented here and there with transverse rose-coloured rays.

REEVE, Pro. Zool. Soc., 1844.

Hab. Bay of Manila (found in sandy mud at the depth of six fathoms); Cuming.

A warm flesh-tinted shell, of which Mr. Cuming collected a few odd valves in the above-mentioned locality, and has lately received several perfect pairs.

Species 3. (Mus. Cuming.)

CARDIUM SINENSE. *Card. testâ subdepresso-orbiculari, posticè leviter rostratâ, omnino, anticè præcipuè, minutissimè granulatâ; radiatim costatâ, costis quatuor et viginti, subcompressis, posticis angustioribus; albido-fulvâ; marginibus fortissimè crenatis.*

THE CHINESE COCKLE. Shell somewhat depressly orbicular, posteriorly slightly beaked, everywhere minutely granulated, especially on the anterior side; radiately ribbed, ribs four and twenty in number, a little compressed, posterior narrower; fulvous white, margins very strongly crenated.

SOWERBY, Pro. Zool. Soc., 1840. Conch. Illus. f. 35.

Hab. China and Java.

The ribs of this species are peculiarly narrowed along the summit; and the granulated surface of the shell is of an extremely curious character.

Species 4. (Mus. Cuming.)

CARDIUM PSEUDO-LIMA. *Mitr. testâ subcordatâ, ventricosâ, radiatim sulcatâ, sulcis ad duodequadragenis, liris intermediis planiusculis, interdum omnibus, interdum lateralibus solum, tuberculis minimis serialibus, aspero-squamatis, armatis; roseo-incarnatâ, radiis roseis transversis ornatâ, tuberculis albis.*

THE FILE-LIKE COCKLE. Shell somewhat heart-shaped, ventricose, radiately grooved, grooves about thirty-eight in number, intermediate ridges rather flat, sometimes the whole, sometimes the lateral ridges only, armed with rows of very minute sharp-scaled tubercles; pink flesh-colour, ornamented with pink transverse rays, tubercles white.

Variety β.

Testa omnino nivea.

Shell entirely snowy white.

LAMARCK, Anim. sans vert. vol. vi. p. 396.

Hab. Zanzibar, east coast of Africa (found in deep water).

Mr. Cuming possesses the variety β of this well known species, of a pure snowy white, in fine fresh condition.

Species 5. (Mus. Cuming.)

CARDIUM BELCHERI. *Card. testâ gibboso-globosâ, longitudinaliter subobliquè costatâ, costis ad quinque et vicenis, squamis compressis, plano-mucronatis, anticè reflexo-inclinatis, peculiariter armatis; flavicante-incarnatâ, lateraliter et basaliter roseo vividè tinctâ.*

BELCHER'S COCKLE. Shell gibbously globose, longitudinally rather obliquely ribbed, ribs about five and twenty in number, peculiarly armed with compressed flatly pointed scales, bent over in the anterior direction; yellowish flesh-colour, brightly stained at the sides and around the base with rose-pink.

BRODERIP and SOWERBY, Zoological Journal, vol. iv. p. 336. pl. 9. f. 3.

Hab. California and Panama; Belcher.

No one can fail to recognise this remarkable species by the erect flattened festooned scales which ornament the ribs.

Species 6. (Mus. Cuming.)

CARDIUM RINGENS. *Card. testâ rotundatâ, interdum depressiusculâ, latere postico paululum hiante; radiatim costatâ, costis ad sex et vicenis, plano-convexis, mulicis, interstitiis posticis prope margines peculiariter incisis; flavescente-albâ, roseo partim tinctâ.*

THE GRINNING COCKLE. Shell rounded, sometimes rather depressed, a little gaping at the posterior side; radiately ribbed, ribs about six and twenty in number, flatly convex, smooth, posterior interstices peculiarly cut open near the margins; yellowish-white, partially stained with pink.

CHEMNITZ, Conch. Cab. vol. vi. p. 176. pl. 16. f. 170.

Hab. Mouth of the Gambia, Africa (found in sandy mud).

This species is singularly characterized by the curious manner in which the interstices between the ends of the posterior ribs remain open.

Species 7. (Mus. Cuming.)

CARDIUM MULTIPUNCTATUM. *Mitr. testâ oblongo-ovatâ, obliquâ, depressiusculâ, tenui, lævigatâ, politâ, radiatim confertissimè impresso-striatâ; rufescente-fulvâ, posticè rubro vividè tinctâ, punctis rubris undique pictâ; intus flavido-rufescente.*

THE MANY-DOTTED COCKLE. Shell oblong-ovate, oblique, rather depressed, thin, smooth, polished, engraved with very close radiating impressed striæ; reddish fulvous, stained with bright red on the posterior side, painted all over with red dots, interior yellowish red.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. China and the Philippine Islands.

The *Cardium multipunctatum* which Mr. Sowerby described in 1833 as being a shell of great rarity, has now become comparatively abundant.

CARDIUM.

PLATE II.

Species 8. (Mus. Cuming.)

CARDIUM BULLATUM. *Card. testâ transversè ovatâ, tenui, utrinque hiante, latere postico producto; costatâ, costis ad sex septemve et quadraginta, subangustis, striâ subtilissimâ elevatâ interveniente, costis anticis crenulatis, posticis squamiferis; albidâ, roseo purpureove sparsim maculatâ.*

THE STUDDED COCKLE. Shell transversely ovate, thin, gaping at both sides, posterior side produced; ribbed, ribs about six or seven and forty in number, rather narrow, with a very fine raised stria intervening between each, anterior ribs crenulated, posterior squamiferous; whitish, spotted here and there with rose or purple.

LAMARCK, Anim. sans vert. (Deshayes edit.), vol. vi. p. 394.
Chemnitz, Conch. Cab. vol. vi. pl. 6. f. 49, 50.
Solen bullatus, Linnæus.

Hab. Islands of Nevis and St. Vincent, West Indies; Guilding.

Variety β.

Testa latere postico minus producto, costis subplanioribus, maculis roseis vel purpureis grandibus, frequentioribus.

Shell with the posterior side less produced, ribs rather flatter, rose or purple spots larger, more frequent.

Encyclopédie Méthodique, pl. 296, f. 6 *a*, *b*.

Cardium aspersum, Sowerby, Pro. Zool. Soc., 1833.

Hab. St. Elena and Monte Christi, West Columbia (found in sandy mud at the depth of seven fathoms); Cuming.

I do not conceive that the modification of character which distinguishes variety β, figured in the 'Encyclopédie Méthodique,' can be regarded of any particular specific importance.

Species 9. (Mus. Cuming.)

CARDIUM PAPYRACEUM. *Card. testâ depresso-cordatâ, tenui, fragili anticè minutissimè granulatâ, radiatim impresso-striatâ, striis rudo-incisis, epidermide radicantibus; albidâ aut flavicante, purpureo hic illic pallidissimè tinctâ, umbonibus rufo-purpureis, intus rufo-purpureâ.*

THE PAPYRACEOUS COCKLE. Shell depressly heart-shaped, thin, fragile, anteriorly very minutely granulated, radiately impressly striated, striæ rudely engraved, giving root to an epidermis; whitish or yellowish, faintly tinged here and there with purple, umbones reddish purple, interior reddish purple.

CHEMNITZ, Conch. Cab., vol. vi. p. 190. pl. 18. f. 184.
SOWERBY, Conch. Illus. f. 56 (not f. 55).

Hab. East end of the Island of Luzon, Philippines (found in sandy mud at the depth of seven fathoms); Cuming.

The accompanying figure, and Fig. 56. of Mr. Sowerby's 'Conchological Illustrations,' represent varieties of the true *Cardium papyraceum*, and are quite distint from a fine new species which has been confounded with it in the same work, at Fig. 55. This shell, for which see *Cardium muticum*, Plate VI., is of much larger dimensions, of a more transversely ovate form, and exhibits no indication of that curious minute granulation which characterizes the posterior side of the *Cardium papyraceum*, after the manner of the *Cardium Sinense*.

Species 10. (Mus. Cuming.)

CARDIUM MULTISPINOSUM. *Card. testâ rotundatâ, ventricosâ, radiatim costatâ, costis ad tribus et tricenis, utrinque acutè angulatis, brevi-spinosis; incarnato-albâ, rosaceo hic illic pallidè tinctâ, interstitiis inter costas nonnunquam fuscescentibus, spinis albis; intus albicante, radiatim symmetricè sulcatâ.*

THE MANY-SPINED COCKLE. Shell rounded, ventricose, radiately ribbed, ribs about three and thirty in number, sharply angled on both sides, armed with short spines; flesh-tinted white, palely stained here and there with pink, interstices between the ribs sometimes brown, spines white; interior white, radiately symmetrically grooved.

Variety β.

Testa grandior, costis latioribus, de quatuor et vicenis a duodetricenis.

Shell larger, ribs wider, from four and twenty to eight and twenty in number.

Hab. Islands of Mindanao and Zebu, Philippines (found in sandy mud at low water, and at the depth of from six to twenty-five fathoms); Cuming.

The ribs of this beautiful species are peculiar in being quite under-grooved, as it were, on each side.

Species 11. (Mus. Cuming.)

CARDIUM COSTATUM. *Card. testâ ovato-globosâ, tenui, ventricosâ, subæquilaterali, latere postico hiante; radiatim costatâ, costis novenis, angustis, compressis, acutè elevatis, cavis, subdistantibus; niveâ, interstitiis inter costas, posticis præcipuè, longitudinaliter fusco-fasciatis.*

THE RIBBED COCKLE. Shell ovately globose, thin, ventricose, nearly equilateral, posterior side gaping; radiately ribbed, ribs nine in number, narrow, compressed, sharply elevated, hollow, rather distant; snowy white, interstices between the ribs, the posterior especially, longitudinally brown-banded.

LINNÆUS, Syst. Nat. (Gmelin edit.), p. 3244.

Hab. East coast of Africa.

This remarkable and well-known shell stands almost alone in the genus, the *Cardium hians*, Plate V., being the only other species which presents any real affinity with it.

Species 12. (Mus. Cuming.)

CARDIUM LYRATUM. *Card. testâ rotundatâ, nonnunquam depressiusculâ, posticè longitudinaliter costatâ, costis crebris; anticè transversim obliquè plicato-liratâ, liris angustis, distantioribus, subirregulariter leviter undulatis, interstitiis longitudinaliter minutissimè striatis; lacteâ, epidermide coccineo-rubrâ indutâ, umbonibus purpurascente pallidissimè tinctis; intus rufescente-aureâ.*

THE LYRATED COCKLE. Shell rounded, sometimes a little depressed, posteriorly longitudinally ribbed, ribs close; anterior transversely obliquely plicately ridged, ridges narrow, more distant, rather irregularly slightly undulated, the interstices being longitudinally very minutely striated; cream colour, covered with a deep crimson-red epidermis, umbones very faintly tinged with purple; interior reddish golden colour.

SOWERBY, Pro. Zool. Soc., 1840.

Heb. Island of Negros, Philippines (found in sandy mud at the depth of seventeen fathoms); Cuming.

The *Cardium lyratum* may be distinguished from the *Cardium pectinatum* (*C. Æolicum*, Born), to which it is so nearly allied, by its having no smooth area on the posterior side, and by its pure cream-coloured exterior enveloped in a bright crimson-red epidermis.

Species 13. (Mus. Cuming.)

CARDIUM UNEDO. *Card. testâ subcordatâ, latere postico angulato; radiatim costatâ, costis ad tricenis confertis, interstitiis posticis ad margines subincisis; flavicante, costis scutellis seu liris transversis elatis vividè roseeo-rubris ornatis.*

THE STRAWBERRY COCKLE. Shell somewhat heart-shaped, posterior side angulated; radiately ribbed, ribs about thirty in number, close-set, interstices on the posterior side slightly open at the margins; yellowish, ribs ornamented with bright pinkish-red, elevated cross ridges or small shields.

LINNÆUS, Syst. Nat. (Gmelin edit.), p. 3250.

Hab. Ceylon, Philippine Islands, &c., (found in sandy mud at low water).

The bright red ornamental sculpture of the ribs varies in its character and size from minute cross ridges to small oblong square elevated shields, as in the specimen selected for illustration.

Species 14. (Mus. Cuming.)

CARDIUM PECTINATUM. *Card. testâ gibboso-globosâ, radiatim striatâ, striis numerosis, confertis, posticis elevatis, anticis subobsoletis, plicis angustis subrugosis obliquè decussatis, areâ postremâ lævigatâ; albicante, maculis pallidè rosaceis undatis undiquè pictâ.*

THE PECTINATED COCKLE. Shell gibbously globose, radiately striated, striæ numerous, close-set, the posterior elevated, the anterior somewhat obsolete and obliquely crossed with narrow slightly wrinkled plaits, the extreme posterior area of the shell smooth; white, everywhere painted with waved pink spots.

LINNÆUS (not of Lamarck, nor Philippi), Mus. Ulric. Deshayes, note in new edition of Lamarck, vol. vi. p. 404.

Cardium Æolicum, Born, Lamarck, Sowerby.

Hab. ——?

I restore the Linnæan name of this very beautiful and rare shell upon the testimony of M. Deshayes, much regretting that the appellation erroneously followed by Lamarck should have become so popular amongst conchological writers and amateurs.

15 a

15 b

15 c

16

15 d

15 e

15 f

LIBRARY OF THE BOMBAY BRANCH

CARDIUM.

PLATE III.

Species 15. (Fig. *a*—*f*. Mus. Cuming.)

Variety *a*. Fig. *d* and *e*.
Variety *β*. Fig. *c*.
Variety *γ*. Fig. *a*.
Variety *δ*. Fig. *b* and *f*.

CARDIUM CARDISSA. *Card. testâ lateraliter cordiformi, lateribus planissimo-compressis, utroque convexis, antico interdum, autem raro, concavo; radiatim exculptâ, latere antico liris planis subobsoletis, æqualibus, æquidistantibus, postico lineis minutis elevatis; valvis in medio acutissimè elato-carinatis, carinâ nunc aspero-muricatâ, nunc obtuso-lævigatâ, valvarum marginibus simplicibus, leviter crenulatis, interclaudentibus; pellucidulo-albicante, stramineo pallidè tinctâ, lineis posticis radiantibus minutis plerumque coccineo-rufescentibus; ligamento parvo.*

THE LITTLE-HEART COCKLE. Shell laterally heart-shaped, sides very flatly compressed, both sides convex, the anterior sometimes but very rarely concave; radiately sculptured, the anterior side with equal, equidistant, flat, rather obsolete ridges, the posterior with minute raised lines; valves very sharply elevately keeled in the middle, keel sometimes sharp-prickled, sometimes obtusely smooth, margins of the valves simple, slightly crenulated, interlocking; transparent white, faintly tinged with straw colour, the posterior minute radiating lines generally scarlet-red; ligament small.

LINNÆUS, Syst. Nat., p. 1121.

Testa latere antico concavo.
Shell with the anterior side concave.
Cardium monstrosum, Chemnitz.
Cardium inversum, Lamarck.

Variety *β*. (Fig. 15 *c*.)

Testa stramineo vividè undato-variegata.
Shell undulately variegated with bright straw colour.

Variety *γ*. (Fig. 15 *a*.)

Testa latere antico roseo-maculato.
Shell with the anterior side spotted with rose.
Cardium humanum, Chemnitz.
Cardium Junoniæ, Lamarck.

Variety *δ*. (Fig. 15 *b* and *f*.

Testa latere antico omnino roseo-tincto.
Shell with the anterior side stained all over with rose.
Cardium roseum, Chemnitz.
Cardium Junoniæ var., Lamarck.
Hab. Eastern Seas.

The remarkable laterally compressed growth of this species renders it one of extremely interesting character; and the changes of colour and style of painting which it exhibits are numerous and characteristic. The typical differences of form and colour were regarded both by Chemnitz and Lamarck of sufficient importance to characterize distinct species, I am inclined to agree, however, with Bruguière that no specific difference can be established, an opinion abundantly confirmed by the late numerous arrival of specimens from China, and various islands in the Eastern Hemisphere.

Species 16. (Mus. Cuming.)

CARDIUM RUSTICUM. *Card. testâ subcordatâ, gibbosâ, latere postico subangulato, radiatim costatâ, costis ad vicenis, rotundatis, interstitiis peculiariter crispato-rugosis; fulvo-albicante, fasciis ferrugineo-fuscis latiusculis transversis ornatâ.*

THE RUSTIC COCKLE. Shell somewhat heart-shaped, gibbous, posterior side slightly angulated, radiately ribbed, ribs about twenty in number, rounded, interstices peculiarly crisply wrinkled; fulvous white, ornamented with rather broad rusty-brown transverse bands.

LINNÆUS, Syst. Nat., p. 1124.

Hab. Adriatic and other Seas of Southern Europe.

Varieties of the common *Cardium edule* appear to have been confounded by several authors with this species. The richly painted specimen here represented answers with remarkable accuracy to Linnæus' description of his *Cardium rusticum*, which may be easily distinguished by the curious crisped wrinkled sculpture in the interstices between the ribs.

17

18

19

20

21

23

CARDIUM.

PLATE IV.

Species 17. (Mus. Cuming.)

CARDIUM ACULEATUM (*testa junior*). For description of this shell, which M. Deshayes has apparently taken for the *Cardium ciliare*, see Plate VII.

Species 18. (Mus. Cuming.)

CARDIUM PAUCICOSTATUM. *Card. testâ rotundatâ, tenui, ventricosiusculâ, subæquilaterali, radiatim costatâ, costis paucis, sedecim vel septemdecim, plano-convexis, in medio carinatis, carinâ squamato-spinosâ, intersitiis concavis, latis, transversim crispato-rugosis; pallidè fuscescente alboque transversim undato-zonatâ.*

THE FEW-RIBBED COCKLE. Shell rounded, thin, rather ventricose, nearly equilateral, radiately ribbed, ribs few, sixteen or seventeen in number, flatly convex, keeled in the middle, keel armed with scale-like spines, interstices concave, wide, crisply wrinkled; zoned transversely in a waved manner with white and reddish brown.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 20.
Cardium ciliare var. β? Lamarck.
Cardium ciliare (*specimine antiquissimâ*), Philippi, Enum. Moll. vol. ii. p. 37.

Hab. Adriatic and other Seas of Southern Europe.

I think Mr. Sowerby has acted very judiciously in promoting this shell to the rank of a new species. The *Cardium ciliare*, with which it has been confounded, has certainly as small a number of ribs, and is moreover the only other aculeated cockle with so few, but the spines of these two species vary most importantly in their character. The *Cardium ciliare* has a solid laterally compressed spine like that of the young *Cardium aculeatum*, noticed above; the *Cardium paucicostatum* has a folded scale-like spine, papilliform at the base, like that of the *Cardium erinaceum*.

Species 19. (Mus. Cuming.)

CARDIUM MINDANENSE. *Card. testâ subobliquè cordiformi, longitudinaliter costatâ, costis nonis et viginti, squamiferis, squamis numerosis, confertis, posticè fornicatis, costarum interstitiis subprofundis; albidâ, fusco hic illic nebulosâ; intus posticè vividè purpurascente.*

THE MINDANAO COCKLE. Shell somewhat obliquely heart-shaped, longitudinally ribbed, ribs nine and twenty in number, squamiferous, scales numerous, close-set, arched over posteriorly, interstices between the ribs rather deep; whitish, here and there clouded with brown; interior stained on the posterior side with deep purple.

REEVE, Pro. Zool. Soc., 1844.

Hab. Cagayan, Island of Mindanao, Philippines (found among sand at low water); Cuming.

The vaulted structure of the scales in this species is about intermediate in its character between that of the scales of the *Cardia consors* and *isocardia*.

Species 20. (Mus. Cuming.)

CARDIUM MAGNUM. *Card. testâ maximâ, obliquè cordatâ, ventricosâ, latere postico subangulato-depresso; radiatim costatâ, costis ad quinque et triginta, planulatis, confertiusculis, anticis crenulatis; flavido-fuscescente, maculis purpureo-fuscis transversim serialiter pictâ; areâ posticâ depressâ omnino purpureo-fuscâ.*

THE GREAT COCKLE. Shell very large, obliquely cordate, ventricose, posterior side somewhat angularly depressed; radiately ribbed, ribs about five and thirty in number, flattened, rather close-set, anterior ribs crenulated; yellowish-brown, painted with transverse rows of purple-brown spots, the depressed posterior area entirely purple-brown.

BORN, Test. Mus. Cæs. Vind., pl. 3. f. 5.
Cardium maculatum, Gmelin.
Cardium ventricosum, Bruguière, Lamarck.

Hab. Gulf of Mexico.

The *Cardium magnum* is a large shell but does not attain so large a size as the *Cardia pseudo-lima* and *elatum*. It was described by Bruguière ten years subsequent to the publication of Born's work, and very accurately figured in the 'Encyclopèdie Méthodique' pl. 299. f. 1.

Species 21. (Mus. Cuming.)

CARDIUM LATUM. *Card. testâ transversè ovatâ, depressiusculâ, valdè inæquilaterali, latere antico brevissimo, paulo hiante; radiatim costatâ, costis ad quadragenis, creberrimis, planulatis, striâ unicâ, epidermide setosâ radicante, in medio exiliter impressis; costis margines versus subtilissimè aspero-squamatis; albidâ, flavido-fuscescente variè tinctâ.*

THE BROAD COCKLE. Shell transversely ovate, rather depressed, very inequilateral, anterior side very short, a little gaping; radiately ribbed, ribs about forty in number, very close-set, flat, faintly impressed down the middle with a single stria which gives root to a bristly epidermis; ribs armed with very fine sharp scales towards the margins; whitish, variously stained with yellowish brown.

BORN, Test. Mus. Cæs. Vind., pl. 3. f. 9.

Hab. Island of Mindoro, Philippines (found in sandy mud at the depth of four fathoms); Cuming.

This species may be recognised by its very inequilateral growth.

Species 22. (Mus. Cuming.)

CARDIUM EDULE. *Card. testâ ovato-cordatâ, vix obliquâ, radiatim costatâ, costis ad sexis et viginti, nodulosocrenulatis; albidâ, ferrugineo-fuscescente pallidè tinctâ; intus albâ margine postico rubido-fusco.*

THE EATABLE COCKLE. Shell ovately cordate, slightly oblique, radiately ribbed, ribs about six and twenty in number, nodulously crenulated; whitish, faintly tinged with rusty brown; interior white, posterior edge reddish-brown.

LINNÆUS, Syst. Nat. (Gmelin edit.), p. 3252.

Variety. *Cardium glaucum*, Bruguière.

Hab. Seas of Europe.

This is the common eatable Cockle of our market, so highly esteemed by the generality of mollusk-epicures.

Species 23. (Mus. Cuming.)

CARDIUM FRAGUM. *Card. testâ subcordatâ, latere postico plano-angulato, radiatim costatâ, costis ad tricenta et triginta, confertis, tuberculis squamosis parvis lunatis creberrimè armatis; stramineo-albicante.*

THE WHITE STRAWBERRY COCKLE. Shell somewhat cordate, posterior side flatly angulated, radiately ribbed, ribs about three and thirty in number, close, armed with small thickly set half-moon scale-like tubercles; straw-tinged white.

LINNÆUS, Syst. Nat., p. 1123.

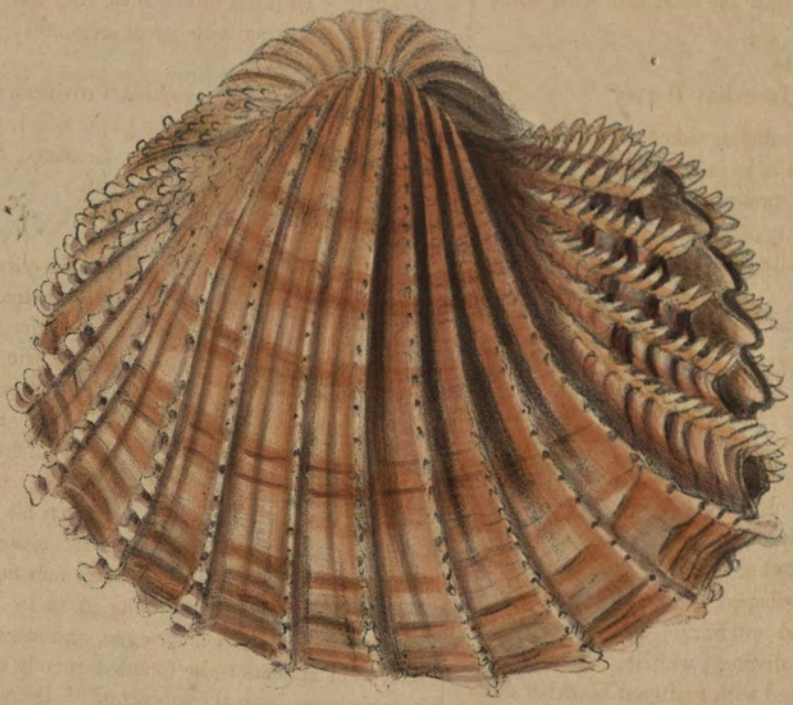
Hab. China, and the Philippine and Pacific Islands.

Found abundantly in the Eastern Hemisphere, and well known to early writers as "The white Strawberry."

24

25

26 a



27

28

26 b

Sowerby del et lith.

Printed by Reeve Brothers

CARDIUM.

PLATE V.

Species 24. (Mus. Saul.)

CARDIUM AUSTRALIENSE. *Card. testâ transversè ovatâ, Donaciformi, medio subcontractâ, postiè flexuoso-angulatâ, subrostratâ, anticè compresso-attenuatâ; dimidio postico radiatim sulcato, antico lævigato, nitente; albidâ, areâ posticâ strigis brevibus fuscis utrinque ornatâ.*

THE AUSTRALIAN COCKLE. Shell transversely ovate, Donax-shaped, a little contracted in the middle, posteriorly flexuously angulated, slightly beaked, anteriorly compressly attenuated; posterior half of the shell radiately grooved, anterior smooth, shining; whitish, posterior area ornamented on each side with short brown stripes.

REEVE, Pro. Zool. Soc., 1844.

Hab. Port Lincoln, South Australia; Harvey.

This shell may be chiefly distinguished from the *Cardium Donaciforme*, to which it is in many respects allied, by the contracted flexuous prolongation of the posterior portion, and by the peculiarity of one half of the shell being conspicuously grooved, whilst the other half is smooth and shining.

Species 25. (Mus. Cuming.)

CARDIUM DONACIFORME. *Card. testâ transversè ovatâ, solidiusculâ, Donaciformi, posticè angulatâ, anticè compresso-attenuatâ; radiatim sulcatâ, sulcis anticis minus distinctis; albidâ, vel aurantio-lutescente, punctis nigricantibus sparsis nebuloso-pictâ.*

THE DONAX-SHAPED COCKLE. Shell transversely ovate, rather solid, Donax-shaped, angulated posteriorly, compressly attenuated anteriorly; radiately grooved, anterior grooves less distinct; whitish, or orange yellow, nebulously painted with scattered blackish dots.

SCHROETER, Einl. Conch., vol. iii. p. 68.

Hab. Island of Negros, Philippines (found in sandy mud at low water); Cuming.

The *Cardium Donaciforme* is of a much more solid and ventricose structure than the *Cardium Australiense*, wanting the posterior contraction, whilst the radiating grooves extend over its entire surface. The colour assumes a deeper tint and the spots are more clouded together on the posterior area, though presenting no appearance of cross stripes as in the preceding species.

Species 26. (Fig. *a*, Mus. Cuming; Fig. *b*. Mus. Saul.)

CARDIUM TRIGONOIDES. *Card. testâ trigono-cordatâ, posticè elongatâ, subangulatâ, umbonibus obtuso-carinatis, anticè abbreviatâ, subcompressâ; glaberrimâ, albidâ, radiis fuscescentibus, paulo elevatis, costis planulatis detritis simillimis, ab umbonibus regulariter divergentibus, ornatâ.*

THE TRIANGULAR COCKLE. Shell triangularly cordate, elongated and slightly angulated posteriorly with the umbones obtusely keeled, shortened and compressed anteriorly; very smooth, whitish, ornamented with slightly elevated brown rays, very like worn flattened ribs, diverging with great regularity from the umbones.

PALLAS, 'Reise durch verschied. Provinzen des Russischen Reichs,' vol. i.; Anhang (Appendix), p. 26, no. 80.
Cardium lineatum, Gmelin, Lamarck, Sowerby.
Didacna trigonoides, Eichwald.

Hab. Caspian Sea; Pallas, Eichwald.

The above is one of three shells described by Pallas in a somewhat obscure work treating principally of botanical subjects, entitled 'Journey through different Provinces of the Russian Empire,' published at Leipzic in 1776.

Although a species of some rarity in our collections, it must be tolerably abundant in the Caspian Sea according to the testimony of both Pallas and Eichwald. The former, in the work above quoted, says "copiosissima testa mari Caspii"; and the latter writer, in his 'Fauna Caspio-Caucasia,' published only three years since, says "Hab. in omni fere mari Caspio, in septentrionali æque ac in meridionali ejus parte." The locality given by Lamarck, "Seas of America," is extremely vague, and most probably incorrect, as it appears to be founded merely upon the fact of his specimen, from the cabinet of M. Defrance, having been presented to that naturalist by M. Richard after his return from Guyana.

It will perhaps be interesting to know that the shell before me, belonging to Miss Saul, is from the same source; the chief portion of M. Richard's conchological rarities fell into the possession of Dr. Goodhall of Eton, and, at the death of the venerable Provost, the specimen in question passed into the collection of the Rev. Mr. Stainforth, to whom its present possessor is indebted for it.

Species 27. (Mus. nobis.)

CARDIUM HIANS. *Card. testâ ovato-globosâ, subobliquâ, subæquilaterali, ventricosissimâ, posticè latissimè hiante, radiatim costatâ, costis vicenis, angustis, subobtusis, medianis lirâ parvâ obtuso-convexâ interveniente, anticis squamiferis, posticis invicem compresso-planulatis, serrato-spinosis, spinis valdè irregularibus; fuscescente, ustulato-fusco fasciatim variegatâ, interstitiis postico-medianis nigricante-fuscis, costis postremis subrosaceis, spinis albis, quasi eburneis.*

THE GAPING COCKLE. Shell ovately globose, rather oblique, nearly equilateral, very ventricose, very widely gaping posteriorly, radiately ribbed, ribs twenty in number, narrow, rather blunt, middle ribs with a small obtusely convex ridge running between them, anterior ribs squamiferous, posterior compressly flattened one upon the other, serrately spined, spines very irregular; brownish, the posterior-middle interstices blackish brown, extreme posterior ribs pinkish, spines white, like ivory.

BROCCHI, Conch. Foss. Subap., vol. ii. p. 508, pl. 13, f. 6.
Cardium Indicum, Lamarck, Sowerby.
Cardium Burdigalinum (fossil), Lamarck.

Hab. Algeria.

This rare and very remarkable shell is one of considerable importance in the genus on account of its being the recent analogue of a fossil species described, and most accurately figured by Brocchi. Lamarck published the description of an odd valve which came into his possession, under the name of *Cardium Indicum*, and another valve was subsequently figured by Sowerby with the same title in the Conchological Illustrations. M. Deshayes, however, in his invaluable edition of Lamarck's 'Anim. sans vert.,' says, "Cette belle et précieuse coquille est réellement le type vivant d'une espèce bien connue à l'état fossile, et dont Brocchi a donné une bonne figure sous le nom de *Cardium hians*"; and he has kindly satisfied me by occular demonstration and comparison that another fossil shell, "Le *Cardium Burdigalinum* de Lamarck est une variété de localité de la meme espèce."

The *Cardium hians* is of a light ventricose structure, gaping widely at the posterior side, and the only species approximating to that singularly formed shell the common *Cardium costatum*; the ribs of this species are much more feebly developed, but they exhibit a remarkable peculiarity of sculpture, the anterior ribs being surmounted with round vaulted scales somewhat like those of a miniature *Tridacna*, whilst the posterior, which are curiously flattened down one against the other, are armed along the edge with irregular short stout white spines, looking exactly like so many rows of small ivory tusks.

Species 28. (Mus. Cuming.)

CARDIUM IMBRICATUM. *Card. testâ subquadratâ, crassiusculâ, anticè rotundatâ, posticè angulatâ, impresso-concavâ, radiatim costatâ, costis angustis, elevatiusculis, novenis et viginti, quarum undecenis postremis parvis, lævibus, cæteris squamis brevibus obesiusculis fornicatis armatis; extus niveâ, intus vividè aurantiâ, posticè purpurascente tinctâ.*

THE IMBRICATED COCKLE. Shell somewhat square, rather thick, rounded anteriorly, angulated, impressly concave posteriorly, radiately ribbed, ribs narrow, rather elevated, twenty nine in number, the eleven most posterior of which are small, smooth, the rest armed with short stout vaulted scales; snowy white, interior bright orange, stained on the posterior side with pale purple.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Swan River Colony.

The form of this shell is exactly similar to that of the *Cardium medium*, the anterior and middle ribs being, however, much more strongly squamiferous, and the interstices more deeply furrowed. It is a solid characteristic shell exhibiting, like all specimens from the rich and abundant locality above noted, an extremely delicate contrast from the interior, especially towards the hollow of the umbones, being of a bright orange, tinged along the posterior edge with pinkish purple, whilst the exterior is of a pure snowy white.

29

30

31

32

33

34

CARDIUM.

PLATE VI.

Species 29. (Mus. Saul.)

CARDIUM BIANGULATUM. *Card. testâ subquadrato-cordatâ, anticè rotundatâ, posticè concavo-angulatâ, subproductâ, radiatim costatâ, costis octonis et viginti, quarum novenis postremis angustis, parvis, rotundis, cæteris latioribus, planiusculis, peculiariter obliquo- seu undato-crenatis, costarum interstitiis transversim elevato-striatis; intus vividè purpureâ.*

THE DOUBLE-ANGLED COCKLE. Shell somewhat squarely cordate, rounded anteriorly, concavely angulated and a little produced posteriorly, radiately ribbed, ribs twenty-eight in number, the extreme posterior nine of which are narrow, small, round, the rest wider, rather flat and peculiarly obliquely or undately crenated, interstices between the ribs transversely elevately crenated; interior richly stained with purple.

SOWERBY, Zool. Journal. vol. iv. p. 307; Conch. Illus. f. 2.

Hab. St. Elena and Isle of Plata, West Columbia (found in coral sand at the depth of seventeen fathoms); Cuming.

A species well distinguished amongst other characters by the peculiarly irregular manner in which the ribs are crenated, and by its rich purple interior.

Species 30. (Mus. Cuming.)

CARDIUM MEDIUM. *Card. testâ subquadrato-cordatâ, anticè rotundatâ, posticè concavo-angulatâ, radiatim costatâ, costis senis et triginta, angustis, anticis brevisquamosis; albidâ, rubido-fusco nebulosâ et maculatâ; intus albâ.*

THE MIDDLE COCKLE. Shell somewhat squarely cordate, rounded anteriorly, concavely angulated posteriorly, radiately ribbed, ribs six and thirty in number, narrow, the anterior covered with short scales; whitish, clouded and spotted with reddish brown; interior white.

LINNÆUS, Syst. Nat., p. 1121.

Hab. Islands of Nevis and St. Vincent, West Indies (found in sandy mud at the depth of about six fathoms); Guilding.

It is a curious circumstance in the structure of this shell that the three most extreme posterior ribs next the ligament are broader than any of the rest.

Species 31. (Mus. Cuming.)

CARDIUM PLANICOSTATUM. *Card. testâ subquadrato-cordatâ, umbones versus attenuatâ, anticè rotundatâ, posticè brevissimè concavo-angulatâ, areæ posticæ medio prominulo, radiatim costatâ, costis tricenis, planis, acutimarginatis, anticis subrugoso-crenatis, posticis posticè subtiliter serratis, omnibus striis impressis arcuatis creberrimè exsculptis; costarum interstitiis profundè excavatis; rufescente-carneâ, fusco nebulosâ et maculatâ, intus albâ.*

THE FLAT-RIBBED COCKLE. Shell somewhat squarely cordate, attenuated towards the umbones, rounded anteriorly, very short, concavely angulated posteriorly, middle of the posterior area prominent, radiately ribbed, ribs thirty in number, flat, sharp-edged, the anterior crenated in a somewhat wrinkled manner, posterior finely serrated along the posterior edge, the whole very closely sculptured with arched impressed striæ; interstices between the ribs deeply excavated; warm pinkish flesh-colour, clouded and spotted with brown; interior white.

SOWERBY, Pro. Zool. Soc., 1833; Conch. Illus., f. 25.

Hab. Guacomayo, Central America (found in fine sand at the depth of thirteen fathoms); Cuming.

One of the most remarkable features in this species is the extremely delicate manner in which the flattened surface of the ribs is very minutely engraved throughout with close-set arched impressed striæ. The specimen here figured, from the collection of Mr. Cuming, and one in the British Museum, are all that have as yet been discovered.

Species 32. (Mus. Cuming.)

CARDIUM MUTICUM. *Card. testâ transversè ovatâ, depressâ, tenui, fragili, anticè paulo hiante, undique muticâ, radiatim impresso-striatâ, striis rudo-incisis, minutissimè undulatis, epidermide tenui radicantibus, striarum lateralium interstitiis medio concavis; lutescente, rosaceo-purpurascente umbones versus pallidè tinctâ.*

THE SMOOTH COCKLE. Shell transversely ovate, depressed, thin, fragile, a little gaping anteriorly, everywhere smooth, radiately impressly striated, striæ rudely engraved, very minutely waved or zigzag, giving root

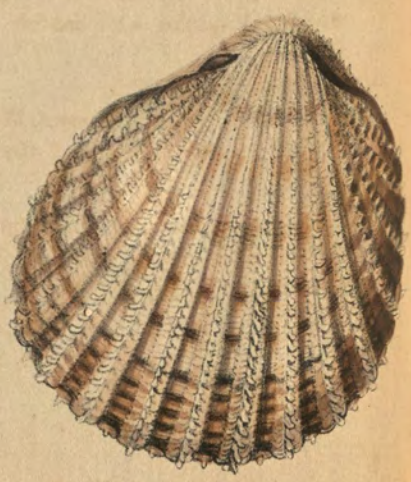
29

30

31

32

33



34

CARDIUM.

PLATE VI.

Species 29. (Mus. Saul.)

CARDIUM BIANGULATUM. *Card. testâ subquadrato-cordatâ, anticè rotundatâ, posticè concavo-angulatâ, subproductâ, radiatim costatâ, costis octonis et viginti, quarum novenis postremis angustis, parvis, rotundis, cæteris latioribus, planiusculis, peculiariter obliquo- seu undato-crenatis, costarum interstitiis transversim elevato-striatis; intus vividè purpureâ.*

THE DOUBLE-ANGLED COCKLE. Shell somewhat squarely cordate, rounded anteriorly, concavely angulated and a little produced posteriorly, radiately ribbed, ribs twenty-eight in number, the extreme posterior nine of which are narrow, small, round, the rest wider, rather flat and peculiarly obliquely or undately crenated, interstices between the ribs transversely elevately crenated; interior richly stained with purple.

SOWERBY, Zool. Journal. vol. iv. p. 307; Conch. Illus. f. 2.

Hab. St. Elena and Isle of Plata, West Columbia (found in coral sand at the depth of seventeen fathoms); Cuming.

A species well distinguished amongst other characters by the peculiarly irregular manner in which the ribs are crenated, and by its rich purple interior.

Species 30. (Mus. Cuming.)

CARDIUM MEDIUM. *Card. testâ subquadrato-cordatâ, anticè rotundatâ, posticè concavo-angulatâ, radiatim costatâ, costis senis et triginta, angustis, anticis brevisquamosis; albidâ, rubido-fusco nebulosâ et maculatâ; intus albâ.*

THE MIDDLE COCKLE. Shell somewhat squarely cordate, rounded anteriorly, concavely angulated posteriorly, radiately ribbed, ribs six and thirty in number, narrow, the anterior covered with short scales; whitish, clouded and spotted with reddish brown; interior white.

LINNÆUS, Syst. Nat., p. 1121.

Hab. Islands of Nevis and St. Vincent, West Indies (found in sandy mud at the depth of about six fathoms); Guilding.

It is a curious circumstance in the structure of this shell that the three most extreme posterior ribs next the ligament are broader than any of the rest.

Species 31. (Mus. Cuming.)

CARDIUM PLANICOSTATUM. *Card. testâ subquadrato-cordatâ, umbones versus attenuatâ, anticè rotundatâ, posticè brevissimè concavo-angulatâ, areæ posticæ medio prominulo, radiatim costatâ, costis tricenis, planis, acutimarginatis, anticis subrugoso-crenatis, posticis posticè subtiliter serratis, omnibus striis impressis arcuatis creberrimè exsculptis; costarum interstitiis profundè excavatis; rufescente-carneâ, fusco nebulosâ et maculatâ, intus albâ.*

THE FLAT-RIBBED COCKLE. Shell somewhat squarely cordate, attenuated towards the umbones, rounded anteriorly, very short, concavely angulated posteriorly, middle of the posterior area prominent, radiately ribbed, ribs thirty in number, flat, sharp-edged, the anterior crenated in a somewhat wrinkled manner, posterior finely serrated along the posterior edge, the whole very closely sculptured with arched impressed striæ; interstices between the ribs deeply excavated; warm pinkish flesh-colour, clouded and spotted with brown; interior white.

SOWERBY, Pro. Zool. Soc., 1833; Conch. Illus., f. 25.

Hab. Guacomayo, Central America (found in fine sand at the depth of thirteen fathoms); Cuming.

One of the most remarkable features in this species is the extremely delicate manner in which the flattened surface of the ribs is very minutely engraved throughout with close-set arched impressed striæ. The specimen here figured, from the collection of Mr. Cuming, and one in the British Museum, are all that have as yet been discovered.

Species 32. (Mus. Cuming.)

CARDIUM MUTICUM. *Card. testâ transversè ovatâ, depressâ, tenui, fragili, anticè paulo hiante, undique muticâ, radiatim impresso-striatâ, striis rudo-incisis, minutissimè undulatis, epidermide tenui radicantibus, striarum lateralium interstitiis medio concavis; lutescente, rosaceo-purpurascente umbones versus pallidè tinctâ.*

THE SMOOTH COCKLE. Shell transversely ovate, depressed, thin, fragile, a little gaping anteriorly, everywhere smooth, radiately impressly striated, striæ rudely engraved, very minutely waved or zigzag, giving root

to a slight epidermis, interstices between the lateral striæ hollowed down the middle; pale yellow, faintly tinged with purple towards the umbones.

Cardium papyraceum, var., Sowerby, Conch. Ill., f. 55.

Hab. —— ?

This is another very interesting shell of which no particular account has yet been given, Mr. Sowerby refers it to *Cardium papyraceum* (Sp. 9.), but an important character presents itself in that species, namely, the anterior side being roughed with very minute granules, of which I find no indication in this; and it is moreover *transversely* ovate, and altogether of a different tenour of form.

Species 33. (Mus. Cuming.)

CARDIUM MURICATUM. *Card. testâ cordato-ovatâ, subobliquâ, radiatim costatâ, costis convexis, tribus et triginta, quarum novenis anticis tuberculis minutis compressis, obliquè digestis, anticè muricatis, deinde duabus utrinque muricatis, cæteris posticè muricatis; albidâ et flavicante, maculis perpaucis fuscis hic illic ornatâ, lateribus marginibusque ventralibus aurantiis.*

THE MURICATED COCKLE. Shell cordately ovate, somewhat oblique, radiately ribbed, ribs convex, three and thirty in number, of which nine anterior are muricated with minute compressed obliquely arranged tubercles on the anterior side, then follow two muricated on both sides, and the rest muricated on the posterior side; whitish and yellowish, ornamented here and there with a few light brown spots, sides and ventral margins orange.

LINNÆUS, Syst. Nat., p, 1123.

Hab. West Indies.

I think it very probable that several other species which the more critical acumen of modern conchologists has helped to identify were included under the above title by early writers.

Species 34. (Mus. Cuming.)

CARDIUM ECHINATUM. *Card. testâ orbiculari-cordatâ, subæquilaterali, radiatim costatâ, costis viceni interdum pluribus, medio exaratis, spinularum brevium seriâ regulari sulco exorientibus, costis interstitiisque persicuè corrugatis; albidâ aut fuscescente, fusco concentrici fasciatâ.*

THE SHORT-PRICKLY COCKLE Shell orbicularly cordate, nearly equilateral, radiately ribbed, ribs twenty in number, sometimes more, ploughed down the middle with a regular row of small short spines rising out of the groove, ribs and interstices conspicuously wrinkled or rather shrivelled; whitish or brownish, concentrically banded with brown.

LINNÆUS, Syst. Nat.. p. 1122. Enc. méth., pl. 298. f. 3.

Hab. Seas of Europe.

I cannot exactly concur in Lamarck's description of this well-known species, because its chief peculiarity appears to me to consist in the spines being very small, short, and not papilliferous at the base as in the *Cardium erinaceum*.

35

36

37

47

38 a

39

38 b

d et lith.

Printed by Reeve Brothers

CARDIUM.

PLATE VII.

Species 35. (Fig. Enc. méth. pl. 298. f. 4.)

CARDIUM CILIARE. *Card. testâ subcordatâ, radiatim costatâ, costis sedecim, angustis, peculiariter compresso-ciliatis.*

THE CILIATED COCKLE. Shell somewhat cordate, radiately ribbed, ribs sixteen in number, narrow, peculiarly compressly ciliated.

LINNÆUS, Syst. Nat. (12th. edit.), p. 1122.

Chemnitz, Conch. Cab. vol. vi. p. 178, pl. 17, f. 171, 172.

Hab. —— ?

I publish this species upon the testimony of the figures above referred to, as being quite distinct from the young of the *Cardium aculeatum* represented in Plate IV. which has twenty-three ribs, whilst the *Cardium ciliare*, like the *Cardium paucicostatum*, has only sixteen.

Species 36. (Mus. Saul.)

CARDIUM OVIPUTAMEN. *Card. testâ obliquè ovatâ, tenui, ventricosâ, radiatim tenuissimè striatâ; niveâ, opacâ, strigis lineisve rosaceo-fuscescentibus exilibus undatis concentricè nebulosâ, epidermide pallidâ margines versus indutâ; marginibus intus subtiliter crenulatis,*

THE EGG-SHELL COCKLE. Shell obliquely ovate, thin, ventricose, radiately very finely striated; opaque snowy white, concentrically clouded with faint waved pinkish-brown spots or lines, covered with a pale epidermis towards the margins; margins finely crenulated within.

REEVE, Pro. Zool. Soc. 1844.

Hab. —— ?

The general appearance of this and the following species is very like that of the *Cardium serratum*, both, however, are of a less oblique form, and the *Cardium oviputamen* under consideration is more ventricose.

The concentrically waved pinkish brown marks above noticed, though faintly indicated, are nevertheless characteristic, as distinguished from those of a different pattern, in the following species.

Species 37. (Mus. Cuming.)

CARDIUM VITELLINUM. *Card. testâ obliquè ovatâ, tenuiculâ, radiatim striatâ; lutescente-albâ, maculis parvis numerosis rosaceo-fuscescentibus umbones versus copiosè lentiginosâ, epidermide luteâ indutâ; marginibus intus crenulatis.*

THE EGG-YOLK COCKLE. Shell obliquely ovate, rather thin, radiately striated; yellowish white, copiously freckled with numerous small pinkish-brown spots, covered with a yellow epidermis; margins crenulated within.

REEVE, Pro. Zool. Soc. 1844.

Hab. —— ?

This shell is of a less ventricose ovate structure than the preceding, and farther distinguished by its different tinge and style of colouring.

Species 17. (Plates IV. and VII. Fig. 17. Mus. Cuming.)

CARDIUM ACULEATUM. *Card. testâ cordatâ, subquadrato-obliquâ, radiatim costatâ, costis tribus et viginti, convexis, aculeis numerosis prominentibus, posticè inflexis, medio seriatim armatis, costarum interstitiis transversim rugoso-fuscescentibus; intus subprofundè sulcatâ.*

THE PRICKLY COCKLE. Shell ovate, somewhat squarely oblique, radiately ribbed, ribs three and twenty in number, convex, armed down the middle with a row of numerous prominent prickles bent over in the posterior direction; interstices between the ribs transversely rugosely impressed; light reddish brown; interior rather deeply grooved.

LINNÆUS, Syst. Nat. (12th edit.), p. 1122.

Hab. Seas of Europe. Britain (dredged off the coast of Dartmouth amongst sand and shells at the depth of about ten fathoms); Cuming.

The prickly spines of this well known species are peculiarly laterally compressed in an early stage of growth as represented at Plate IV.; but they soon disappear by friction or other causes, except on each side beneath the umbones.

Species 38. (Fig. *a*, Mus. Cuming; Fig. *b*, Mus. Saul.)

CARDIUM HEMICARDIUM. *Card. testâ cordatâ, tumidâ, obliquè quadrilaterali, posticè compressâ radiatim costatâ, costis ad senis et viginti, plano-convexis, interstitiis peculiariter crebripunctatis, costis posticis lævibus, anticis tuberculato-crenatis, carinâ prominente, ab umbone ad marginem decurrente, divisis; albâ, areâ posticâ maculis rosaceis parvis interdum tinctâ.*

35

36

37

47

38 a

38 b

39

el et lith.

Printed by Reeve Brothers

CARDIUM.

PLATE VII.

Species 35. (Fig. Enc. méth. pl. 298. f. 4.)

CARDIUM CILIARE. *Card. testâ subcordatâ, radiatim costatâ, costis sedecim, angustis, peculiariter compresso-ciliatis.*

THE CILIATED COCKLE. Shell somewhat cordate, radiately ribbed, ribs sixteen in number, narrow, peculiarly compressly ciliated.

LINNÆUS, Syst. Nat. (12th. edit.), p. 1122.

Chemnitz, Conch. Cab. vol. vi. p. 178, pl. 17, f. 171, 172.

Hab. —— ?

I publish this species upon the testimony of the figures above referred to, as being quite distinct from the young of the *Cardium aculeatum* represented in Plate IV. which has twenty-three ribs, whilst the *Cardium ciliare*, like the *Cardium paucicostatum*, has only sixteen.

Species 36. (Mus. Saul.)

CARDIUM OVIPUTAMEN. *Card. testâ obliquè ovatâ, tenui, ventricosâ, radiatim tenuissimè striatâ; niveâ, opacâ, strigis lineisve rosaceo-fuscescentibus exilibus undatis concentricè nebulosâ, epidermide pallidâ margines versus indutâ; marginibus intus subtiliter crenulatis,*

THE EGG-SHELL COCKLE. Shell obliquely ovate, thin, ventricose, radiately very finely striated; opaque snowy white, concentrically clouded with faint waved pinkish-brown spots or lines, covered with a pale epidermis towards the margins; margins finely crenulated within.

REEVE, Pro. Zool. Soc. 1844.

Hab. —— ?

The general appearance of this and the following species is very like that of the *Cardium serratum*, both, however, are of a less oblique form, and the *Cardium oviputamen* under consideration is more ventricose.

The concentrically waved pinkish brown marks above noticed, though faintly indicated, are nevertheless characteristic, as distinguished from those of a different pattern, in the following species.

Species 37. (Mus. Cuming.)

CARDIUM VITELLINUM. *Card. testâ obliquè ovatâ, tenuiculâ, radiatim striatâ; lutescente-albâ, maculis parvis numerosis rosaceo-fuscescentibus umbones versus copiosè lentiginosâ, epidermide luteâ indutâ; marginibus intus crenulatis.*

THE EGG-YOLK COCKLE. Shell obliquely ovate, rather thin, radiately striated; yellowish white, copiously freckled with numerous small pinkish-brown spots, covered with a yellow epidermis; margins crenulated within.

REEVE, Pro. Zool. Soc. 1844.

Hab. —— ?

This shell is of a less ventricose ovate structure than the preceding, and farther distinguished by its different tinge and style of colouring.

Species 17. (Plates IV. and VII. Fig. 17. Mus. Cuming.)

CARDIUM ACULEATUM. *Card. testâ cordatâ, subquadrato-obliquâ, radiatim costatâ, costis tribus et viginti, convexis, aculeis numerosis prominentibus, posticè inflexis, medio seriatim armatis, costarum interstitiis transversim rugoso-fuscescentibus; intus subprofundè sulcatâ.*

THE PRICKLY COCKLE. Shell ovate, somewhat squarely oblique, radiately ribbed, ribs three and twenty in number, convex, armed down the middle with a row of numerous prominent prickles bent over in the posterior direction; interstices between the ribs transversely rugosely impressed; light reddish brown; interior rather deeply grooved.

LINNÆUS, Syst. Nat. (12th edit.), p. 1122.

Hab. Seas of Europe. Britain (dredged off the coast of Dartmouth amongst sand and shells at the depth of about ten fathoms); Cuming.

The prickly spines of this well known species are peculiarly laterally compressed in an early stage of growth as represented at Plate IV.; but they soon disappear by friction or other causes, except on each side beneath the umbones.

Species 38. (Fig. *a*, Mus. Cuming; Fig. *b*, Mus. Saul.)

CARDIUM HEMICARDIUM. *Card. testâ cordatâ, tumidâ, obliquè quadrilaterali, posticè compressâ radiatim costatâ, costis ad senis et viginti, plano-convexis, interstitiis peculiariter crebripunctatis, costis posticis lævibus, anticis tuberculato-crenatis, carinâ prominente, ab umbone ad marginem decurrente, divisis; albâ, areâ posticâ maculis rosaceis parvis interdum tinctâ.*

THE HALF COCKLE. Shell cordate, swollen, obliquely quadrilateral, posteriorly compressed, radiately ribbed, ribs about six and twenty in number, flatly convex, interstices peculiarly closely punctured, posterior ribs smooth, anterior ribs tubercularly crenated, divided from the posterior by a prominent keel running down from the umbone to the margin in each valve; white, posterior area sometimes stained with small pink spots.

LINNÆUS, Syst. Nat. (Gmelin edit.), p. 3246.

Hemicardium —— ? Cuvier.

Hab. St. Nicolas, Island of Zebu, Philippines (found in sandy mud at low water); Cuming.

The little tubercles which adorn the anterior ribs of this species are always worn away towards the umbones.

Species 39. (Mus. Cuming.)

CARDIUM AURICULA. *Card. testâ subquadrato-cordatâ, valdè tumidâ, posticè concavo-depressâ, radiatim indistinctè costatâ, costis planulatis, interstitiis exiliter punctatis, costis posticis lævibus, anticis hic illic tuberculato-crenatis, carinâ subobtusâ ab umbone ad marginem decurrente divisis, lunulâ profundè excavatâ, calloso intrudo; lutescente-albâ, maculis rosaceis parvis eleganter tinctâ.*

THE EAR COCKLE. Shell somewhat squarely cordate, very much swollen, posteriorly concavely depressed, indistinctly radiately ribbed, ribs flattened, interstices faintly punctured, posterior ribs smooth, anterior ribs here and there tubercularly crenated, separated from the posterior by a rather obtuse keel running down from the umbone to the margin; lunule deeply excavated, with a callosity intruding; yellowish white, elegantly stained with pink spots.

FORSKAEL, Fauna Arabica, f. 122.

Hab. Suez, north-west extremity of the Red Sea; Rüppell.

There appears to be about the same number of ribs in this as in the preceding species, but being rather indistinctly developed they cannot be enumerated with accuracy. The lunule is hollowed out with remarkable force.

40 a

40 b

41

42

43

LIBRARY

Sowerby del et lith.

Printed by Reeve, Brothers

CARDIUM.

PLATE VIII.

Species 40. (Mus. Cuming.)

CARDIUM HYSTRIX. *Card. testâ subquadrato-cordatâ, posticè concavo-angulatâ, radiatim costatâ, costis ad duabus et triginta, angustis, compressis, posticis squamulis brevibus, cæteris spinis squamæformibus erectis, umbones versus subinflexis, elegantissimè ornatis; costarum interstitiis striis elevatis transversim subtiliter cancellatis; albidâ, costarum interstitiis pallidè rosaceis, lineâ vividè coccineâ utrinque pictis; intus purpureo-rufescente.*

THE PORCUPINE COCKLE. Shell somewhat squarely cordate, posteriorly concavely angulated, radiately ribbed, ribs about two and thirty in number, narrow, compressed, the posterior elegantly ornamented with small short scales, the rest with erect scale-like spines, a little inflected towards the umbones; interstices between the ribs transversely finely cancellated with raised striæ; whitish, interstices between the ribs tinged with pink, and painted down each side with a bright scarlet line; interior purple-red.

REEVE, Pro. Zool. Soc., 1844.

Variety β.

Testa extus omnino nivea.

Shell exteriorly entirely white.

Hab. Island of Corrigidor, Philippines (found in coarse sand at the depth of about seven fathoms); Cuming.

The exquisite delicacy and beauty of this shell is remarkable; each rib is surmounted with a close-set row of slender scale-like spines, and the interstices are minutely cancellated; they are moreover tinged with pink, and down each side of the ribs is a bright scarlet line.

The accompanying figure is lithographed by Mr. G. B. Sowerby, Jun., from a very clever drawing of the specimen in Mr. Cuming's collection executed by his sister, a lady of eminent talent in natural history painting.

There is another very beautiful small specimen of the *Cardium hystrix* in the collection of Miss Saul; and Mr. Cuming is also in possession of two of the white variety.

Species 41. (Mus. Cuming.)

CARDIUM ELATUM. *Card. testâ ovatâ, obliquâ, maximâ, radiatim liratâ, liris ad tribus et quadraginta, plano-convexis, umbones versus obsoletis, areis posticâ anticâque extremis lævibus; citrino-flavâ; intus albâ.*

THE LOFTY COCKLE. Shell ovate, oblique, very large, radiately ridged, ridges about three and forty in number, flatly convex, obsolete towards the umbones, extreme posterior and anterior areas smooth; citron yellow, interior white.

SOWERBY, Pro. Zool. Soc., 1833.

Hab. Bay of California (found on mud-banks at low water); Lieut. Barlow.

This and the *Cardium pseudo-lima* are by far the largest species of the genus.

Species 42. (Mus. Cuming.)

CARDIUM PULCHELLUM. *Card. testâ orbiculari, tenui, depressiusculâ, subæquilaterali, radiatim crebristriatâ, striis solidis, elevatis, regularibus, posticis minutissimè squamosis; albidâ, striis quibusdam albis, plerisque vividè coccineis; intus lutescente, radiis binis coccineis ab umbone in utráque valvâ divergentibus.*

THE PRETTY COCKLE. Shell orbicular, thin, somewhat depressed, nearly equilateral, radiately closely striated, striæ solid, raised, regular, the posterior striæ covered with very minute scales; white, striæ some few white, most of them bright scarlet; interior yellowish, two scarlet rays diverging within the umbone in each valve.

Cardium striatulum, jun., Sowerby, Conch. Ill., f. 45.

Hab. Australia.

This very pretty species cannot surely be the young of the *Cardium striatulum*; it is of a different form, being truly orbicular, and offers no indication of the wrinkled striæ with which that species is so peculiarly cancellated.

Species 43. (Mus. Saul.)

CARDIUM GRANIFERUM. *Card. testâ obliquè ovatâ, Trigoniæformi, fortiter radiatim costatâ, costis septemdecem, angulatis, noduloso-graniferis, sulcis interstitialibus latiusculis, profundis, pulcherrimè cancellatis; niveâ.*

THE GRANIFEROUS COCKLE. Shell obliquely ovate, Trigonia-shaped, strongly radiately ribbed, ribs seventeen in number, angulated, nodulously granulated, interstitial grooves rather wide, deep, very beautifully cancellated; snowy white.

BRODERIP and SOWERBY, Zool. Journal, vol. iv. p. 367.

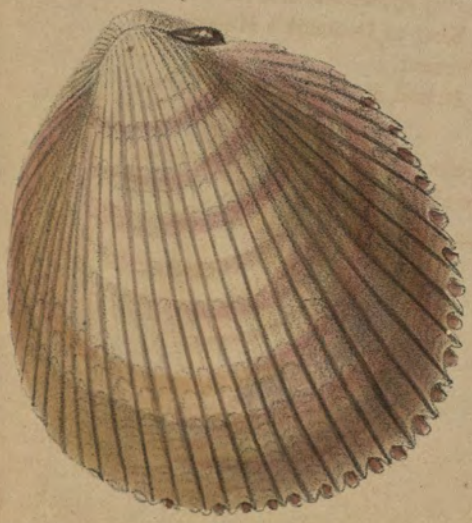
Hab. Gulf of Nicoya, Central America; and Xipixapi, West Columbia; Cuming.

This curious little species may be recognised by its singular resemblance in form to a *Trigonia*.

44

45

46



47

48

del. et lith.

Printed by Reeve Brothers

CARDIUM.

PLATE IX.

Species 44. (Mus. Cuming.)

CARDIUM RUBICUNDUM. *Card. testâ oblongo-ovatâ, vix obliquâ, radiatim costatâ, costis acutè convexis, septenis et triginta, quarum triente anticâ squamoso-crenatâ, mediânâ utrinque obtuso-squamatâ, posticâ tuberculatâ; rubicundâ, umbones versus albicante rubido-fusco maculatâ; marginibus intus vividè rubris.*

THE BRIGHT RED COCKLE. Shell oblong-ovate, very slightly oblique, radiately ribbed, ribs sharply convex, seven and thirty in number, the anterior third portion squamosely crenated, the middle portion obtusely scaled on both sides, the posterior portion obliquely tubercled; bright red, whitish towards the umbones spotted with reddish brown, margins edged with bright pinkish red interiorly.

REEVE, Pro. Zool. Soc., 1844.

Hab. Zanzibar, East Coast of Africa.

An extremely pretty species, remarkable for its vivid colouring, and for the elaborate character of its sculpture.

Species 45. (Mus. Cuming.)

CARDIUM ASSIMILE. *Card. testâ oblongo-ovatâ, obliquè radiatim costatâ, costis quinis et triginta, basi latis, approximatis, summitatem versus attenuatis, anticis crenatis, postremis tuberculatis, medianis lævibus, lateraliter subtilissimè impresso-serratis; pallidè purpureo-rufescente, umbones versus albicante, maculis sparsis variegatâ.*

THE ASSIMILATING COCKLE. Shell oblong, ovate, obliquely radiately ribbed, ribs five and thirty in number, broad and approximated at the base, attenuated towards the summit, anterior rib crenated, the extreme posterior tuberculated, the middle smooth and very finely impressly serrated at the sides; pale purple red, whitish towards the umbones, variegated with scattered spots.

REEVE, Pro. Zool. Soc., 1844.

Hab. Zanzibar, East Coast of Africa.

This species approximates very closely to the *Cardium subelongatum*, yet there are differences which cannot be overlooked; it has a greater number of ribs, and the ribs are of another structure.

Species 46. (Fig. 46 and 47, Mus. Cuming.)

CARDIUM ELONGATUM. *Card. testâ elongato-ovatâ, latere postico subquadrato, serrato; radiatim costatâ, costis tribus et quadraginta, planulatis, confertissimis, anticis subtilissimè crenulatis; albidâ, flavicante sparsim grandimaculatâ, costis, posticis præcipuè, versus margines fuscescente tinctis.*

THE ELONGATED COCKLE. Shell elongately ovate, posterior side somewhat square, serrated, radiately ribbed, ribs three and forty in number, flattened, very close-set, the anterior very finely crenulated; whitish, ornamented with a few scattered large yellowish spots, ribs, the posterior especially, stained with brown towards the margins.

BRUGUIERE, Dict. Enc. Méth., No. 26.

Sowerby, Conch. Illus. f. 49.

Hab. Island of Ticao, Philippines (found among coral sand in deep water); Cuming.

A fine shell in which the ribs are peculiarly flattened, and so closely arranged, that the interstitial grooves have the appearance of deep narrow cuts.

For Species 47. see Plate XIII.

Species 48. (Mus. Cuming.)

CARDIUM PENNANTII. *Card. testâ depresso-cordatâ, subobliquâ, valdè inæquilaterali, radiatim exilissimè sulcatâ, areâ posticâ lævi; sordidè flavicante, epidermide tenui lævi fictili indutâ, intus albâ.*

PENNANT'S COCKLE. Shell depressly cordate, rather oblique, very inequilateral, radiately very faintly grooved, posterior area smooth; dirty yellowish colour covered with a thin smooth earthy epidermis, interior white.

BECK, MSS., H. M. The King of Denmark's Museum. *Cardium lævigatum* Pennant.

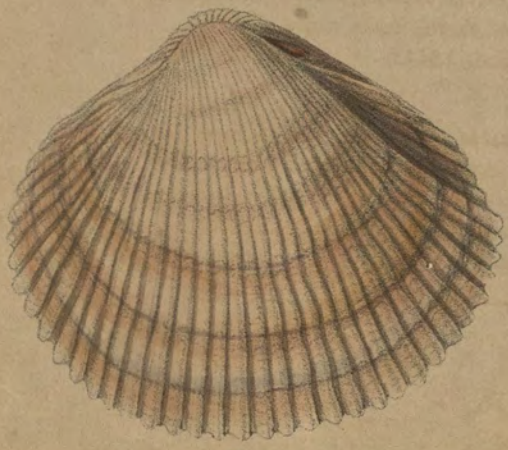
Hab. Exmouth, Devon. (found in sandy mud in deep water); Cuming.

The grooves of this species, which has been confounded with the *C. lævigatum*, are almost obsolete.

49

50

51



52

53

owerby del et lith.

Printed by Reeve Brothers.

CARDIUM.

PLATE X.

Species 49. (Mus. Cuming.)

CARDIUM BIRADIATUM. *Card. testâ elongato-ovatâ, umbones versus attenuatâ, radiatim striatâ, areis posticâ anticâque lævigatis; albâ, maculis roseis undatis sparsis variegatâ, intus roseo vividè biradiatâ.*

THE DOUBLE-RAYED COCKLE. Shell elongately ovate, attenuated towards the umbones, radiately striated, posterior and anterior areas smooth; white, sparingly variegated with waved pink spots, interior vividly stained with two pink rays.

BRUGUIERE, Dict. Enc. Méth. No. 25.

Cardium lævigatum, Chemnitz, Conch. Cab., vol. vi. pl. 18. f. 185 and 186.

Hab. Island of Burias, Philippines (found among coral sand at the depth of about six fathoms); Cuming.

The characteristic mark of this species, as its name implies, is represented by the two pink rays which diverge from within the umbone in each valve. I regret not having exhibited the interior of the shell in the accompanying plate, but the character is most accurately displayed by Chemnitz in the figure above referred to.

Species 50. (Mus. Cuming.)

CARDIUM TENUICOSTATUM. *Card. testâ transversè ovatâ, subobliquâ, tenuiculâ, ventricosâ, radiatim subtilissimè costatâ, costis numerosissimis, nunc quadragenis, nunc duabus tribusve et quinquaginta, muticis; albidâ, costis maculis parvis carneolis undatim variegatis, umbonibus roseo-purpurascentibus.*

THE THIN-RIBBED COCKLE. Shell transversely ovate, rather oblique, somewhat thin, ventricose, radiately very finely ribbed, ribs very numerous, sometimes forty in number, sometimes about fifty-two or -three in number, smooth; whitish, ribs variegated in a waved manner with small flesh-colour spots, umbones rose-purple.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 372.

Hab. New Holland.

The ribs of this species appear to be much more numerous in some specimens than in others, varying from forty to two or three and fifty in each valve.

Species 51. (Mus. Cuming.)

CARDIUM PROCERUM. *Card. testâ oblongo-ovatâ, tumidâ, latere antico rotundato, postico subquadrato-angulato, serrato; radiatim costatâ, costis quinis et viginti, planulatis, arcuatim striatis, quaternis extremo-anticis obsoletiusculis, cæteris posticè angulatis; fusco-albicante, costis maculis perpaucis purpureo-fuscis exiliter tinctis, epidermide fictili lævi indutâ, marginibus posticis intus purpureo-fuscis.*

THE TALL COCKLE. Shell oblong-ovate, swollen, anterior side rounded, posterior somewhat squarely angulated, serrated, radiately ribbed, ribs five and twenty in number, flattened, arcuately striated, the four extreme anterior ribs rather obsolete, the rest posteriorly angulated; brownish-white, ribs faintly stained with a very few purple-brown spots, covered with a thin earthy epidermis, posterior margins purple-brown within.

SOWERBY, Pro. Zool. Soc., 1833.

Testa juvenis,—*Cardium laticostatum*, Sowerby.

Hab. Real Llejos, Central America (found in course sand at a depth of from four to six fathoms); Cuming.

A fine bold species collected by Mr. Cuming at the above named locality, of which the *Cardium laticostatum* of Sowerby is unquestionably the young.

Species 52. (Mus. Cuming.)

CARDIUM PSEUDO-FOSSILE. *Card. testâ depresso-ovatâ, lateraliter subproductâ, radiatim costatâ, costis numerosissimis, ad quinquagenis angustis, lævibus, hinc et illinc tumidiusculis; ferrugineo-albâ.*

THE FOSSIL-LIKE COCKLE. Shell depressly ovate, a little produced on each side, radiately ribbed, ribs very numerous, about fifty in number, narrow, smooth, a little swollen here and there; rusty white.

REEVE, Pro. Zool. Soc., 1844.

Hab. ——?

This is a remarkable species and has so much the appearance of being in a fossil state, that I only felt satisfied to the contrary upon discovering a large portion of fresh horny ligament attached to the hinge of one of Mr. Cuming's specimens.

Species 53. (Mus. Cuming.)

Cardium Grœnlandicum. *Card. testâ depresso-ovatâ, tenui, subcordatâ, lævi, striis impressis subdistantibus radiatim ornatâ, posticis fortioribus; cinereo-albidâ, flammulis minutis rufo-fuscescentibus interdum pictâ, epidermide indutâ.*

The Greenland Cockle. Shell depressly-ovate, thin, somewhat cordate, smooth, radiately ornamented with rather distant impressed striæ, the posterior of which are the stronger; ashy white, sometimes painted with minute reddish brown flames, covered with an epidermis.

Chemnitz, Conch. Cab., vol. vi. pl. xix. f. 198.
Cardium edentulum, Sowerby.
Aphrodite columba, Lea.

Hab. Coast of Greenland.

The *Cardium Grœnlandicum* which Mr. Lea has described in the American Philosophical Transactions as a new estuary type "allied to *Cyrena*," is certainly a very aberrant form of the genus under consideration; the hinge being almost edentulate, and the shell varying considerably in its proportions at different stages of growth. When young it is nearly orbicular as figured in the Conchylien Cabinet and in the Encyclopédie Méthodique; it then assumes a more transverse Mactriform structure, as in the specimen figured in the accompanying plate; and in a more advanced state, when the valves become thickened and partially eroded, the form is more oblong and rounded, like that of the fine examples figured by Mr. Lea in the 'Transactions' above mentioned, and by Mr. Sowerby in his 'Genera of Shells.'

54

55

56

57

58

CARDIUM.

PLATE XI.

Species 54. (Mus. Cuming.)

CARDIUM ICELANDICUM. *Card. testâ subdepresso-ovatâ, tenuiculâ, inæquilaterali, lateribus rotundatis, antico brevissimo; radiatim costatâ, costis quaternis quinisve et triginta, parvis, angustis, medio subtilissimè serratis; albidâ, epidermide crassâ fictili indutâ; umbonibus plus minusve erosis.*

THE ICELAND COCKLE. Shell somewhat depressly ovate, rather thin, very inequilateral, sides rounded, the anterior very short; radiately ribbed, ribs four or five and thirty in number, small, narrow, finely serrated down the middle; whitish, covered with a thick earthy epidermis; umbones more or less eroded.

CHEMNITZ, Conch. Cab. vol. vi. p. 200. pl. 19. f. 195–6. *Cardium Arcticum*, Sowerby.

Testa juvenis,—*Cardium pubescens*, Courthouy.

Hab. Iceland.

The form of this shell is very much like that of a *Cytherea*.

Species 55. (Mus. Cuming.)

CARDIUM SUBRUGOSUM. *Card. testâ subelongato-ovatâ, umbones versus attenuatâ, valdè obliquâ, latere antico peculiariter rotundato; radiatim costatâ, costis ad tricenis, pluribus minoribusve, postremis lævibus, cæteris rugoso-crenatis; lutescente-albâ, pallidè rosaceâ, epidermide luteo-fuscâ margines versus interdum indutâ.*

THE SLIGHTLY-WRINKLED COCKLE. Shell rather elongately ovate, attenuated towards the umbones, very oblique, anterior side peculiarly rounded; radiately ribbed, ribs about thirty, more or less, the extreme posterior ribs smooth, the rest rugosely crenated; yellowish white faintly tinged with rose, sometimes covered towards the margins with a brown epidermis.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 34.

Hab. Ceylon, Philippine Islands, and Zanzibar.

The extreme posterior ribs of this species are smooth and nearly obsolete, whilst the middle ribs are most delicately wrinkled; and the wrinkles, increasing gradually in size and distance from each other, impart to the anterior portion of the shell, a distinctly crenated character.

Species 56. (Mus. Cuming.)

CARDIUM PANAMENSE. *Card. testâ subelongato-ovatâ, ventricosâ, umbones versus attenuatâ, latere antico rotundato, postico subangulato; radiatim costatâ, costis ad vicenis, magnis, conspicuis, primum angulatis, demum rotundatis; albidâ, epidermide olivaceâ indutâ; marginibus posticis intus purpurascentibus.*

THE PANAMA COCKLE. Shell rather elongately ovate, ventricose, attenuated towards the umbones, anterior side rounded, posterior rather angulated; radiately ribbed, ribs about twenty in number, large, conspicuous, first angulated, then rounded; whitish, covered with an olive epidermis, posterior margins purple within.

SOWERBY, Pro. Zool. Soc., 1843.

Hab. Panama (found in sandy mud at the depth of about ten fathoms); Cuming.

This is a truly noble species, very closely allied to the *Cardium procerum*, but easily distinguished by its more elongated form, and by the marked development of the ribs.

Species 57. (Mus. Cuming.)

CARDIUM SUBELONGATUM. *Card. testâ subelongato-ovatâ, oblongâ, radiatim costatâ, costis ad duabus vel tribus et triginta, acutè angulatis, interstitiis profundè excavatis, costis postremis tuberculatis, medianis lævibus, anticis crenatis; albidâ aut flavicante, rubro tinctâ et maculatâ.*

THE SLIGHTLY-ELONGATED COCKLE. Shell rather elongately ovate, oblique, radiately ribbed, ribs about two or three and thirty in number, sharply angled, interstices between them deeply excavated, the extreme posterior ribs armed with small tubercles, the middle ribs smooth, the anterior crenated; whitish or yellowish, stained and spotted with red.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Island of St. Thomas, West Indies.

The deep-ploughed interstices between the ribs are very characteristic in this species.

Species 58. (Mus. Cuming.)

CARDIUM MACULATUM. *Card. testâ oblongo-ovatâ, valdè obliquâ, umbones versus attenuatâ, latere antico peculiariter rotundato; radiatim costatâ, costis duabus tribusve et triginta, plano-convexis, approximatis, anticis pulcherrimè crenulato-rugosis; rufescente, purpureo-rufo vividè tinctâ et maculatâ, umbonibus albicantibus.*

THE SPOTTED COCKLE. Shell oblong-ovate, very oblique, attenuated towards the umbones, anterior side peculiarly rounded, radiately ribbed, ribs two or three and thirty in number, flatly convex, approximated, the anterior very beautifully crenulately wrinkled; reddish, stained and spotted with bright red, umbones whitish.

SOWERBY, Conch. Illus. Cat. *Card.* Sp. 56. f. 18.

Hab. Island of Tres Marias, Gulf of Mexico.

The ribs of this beautiful species are flattened and peculiarly approximated, the interstices exhibiting all the appearance of deep narrow cuts. The delicate crenulated sculpture of the anterior ribs presents a very striking effect.

59

60

61

62

63a

64

63b

Sowerby del. et lith.

Printed by Heeve Brothers

CARDIUM.

PLATE XII.

Species 59. (Mus. Cuming.)

CARDIUM CUMINGII. *Card. testâ transversè ovatâ, tenui, fragili, latere postico hiante; subtilissimè cancellatâ, anticè rugosâ, parte anticâ cristâ vel laminâ elevatâ, ab umbonibus ad margines decurrente, pulcherrimè ornatâ; diaphano-roseâ.*

CUMING'S COCKLE. Shell transversely ovate, thin, fragile, posterior side gaping; very finely cancellated, wrinkled anteriorly, anterior portion of the shell very beautifully ornamented with a thin elevated crest or lamina running down from the umbones to the margins; transparent rose pink.

BRODERIP, Pro. Zool. Soc., 1833.

Hab. Gulf of Dulce, Central America (found in sandy mud at the depth of twelve fathoms); Cuming.

The external appearance of this remarkably delicate transparent rosy Cockle is not much unlike that of some of the *Anatinæ*.

Species 60. (Mus. Cuming.)

CARDIUM STRIATULUM. *Card. testâ transversè ovatâ, tenuiculâ, latere postico paululum hiante; radiatim crebristriatâ, striis conspicuis, elevatis, rugis subtilissimis undatis peculiariter cancellatis, striis posticis versus margines minutissimè brevispinosis; pallidè ferrugineo-albâ; intus albâ, radiis binis aurantio-rufis ab umbone utriusque valvæ divergentibus.*

THE FINELY STRIATED COCKLE. Shell transversely ovate, rather thin, posterior side a little gaping, radiately closely striated, striæ conspicuous, elevated, peculiarly cancellated with very fine waved wrinkles, posterior striæ covered towards the margins with minute short spines; pale rusty white, two orange-red rays diverging from within the umbones of each valve.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. New Zealand.

A thin delicate shell, slightly produced at the posterior side, and having its entire surface cancellated with fine irregularly waved wrinkles.

Species 61. (Mus. Cuming.)

CARDIUM BRASILIANUM. *Card. testâ obliquè ovatâ, umbones versus attenuatâ, lævigatâ, nitidâ; cinereo-albâ, lineis spadiceo-rufis longitudinalibus margines versus creberrimè pictâ, areis posticâ anticâque fasciis brevibus latiusculis nigricante-cinereis subirregulariter decussatâ.*

THE BRAZILIAN COCKLE. Shell obliquely ovate, attenuated towards the umbones, smooth, shining; ashy white, closely painted towards the margins with brownish red longitudinal lines, posterior and anterior areas somewhat irregularly crossed with rather broad dark ashy bands.

LAMARCK, Anim. sans vert. (Deshayes' edit.) vol. vi. p. 393.

Hab. Coast of Brazil.

The radiating longitudinal lines, with which this shell is partially painted, are very characteristic. "Cette coquille," says Lamarck, "n'offre ni cotes, ni stries longitudinales, mais seulement des lignes colorées."

Species 62. (Mus. Cuming.)

CARDIUM ERINACEUM. *Card. testâ rotundato-cordatâ, globosâ, radiatim costatâ, costis senis et triginta, acutè angulatis, aculeis numerosis brevibus, posticè inflexis, basi papilliferis, anticis præcipuè, medio creberrimè armatis, costarum interstitiis profundè excavatis, transversim impresso-striatis; rufo-fuscescente.*

THE HEDGE-HOG COCKLE. Shell rotundately cordate, globose, radiately ribbed, ribs six and thirty in number, sharply angled, very closely armed down the middle with numerous rather short spines bent over in the posterior direction and papilliferous at the base, the anterior especially, interstices between the ribs deeply excavated, transversely impressly striated; light reddish-brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 397.

Hab. Mediterranean.

This species may be easily distinguished from the *Cardium aculeatum* by its having a greater number of ribs, and by the papilliferous structure of its spines.

Species 63. (Fig. *a* and *b*, Mus. Cuming.)

CARDIUM RUGATUM. *Card. testâ orbiculari, tenuissimâ, fragili, latere postico producto, hiante; radiatim costatâ, costis ad tribus vel quaternis et quadraginta, tenuibus, subsuperficiariis, umbones versus fere obsoletis; albidâ roseo variegatâ, vel purpurascente, vel luteo-spadiceâ, umbonibus roseo-purpureis.*

The shrivelled Cockle. Shell orbicular, very thin, fragile, posterior side produced, gaping open; radiately ribbed, ribs about three or four and forty in number, thin, rather superficial, nearly obsolete towards the umbones; sometimes whitish variegated with pink, sometimes purple or yellowish bay, umbones pinkish purple.

Gronovius, Zoophylacium, pl. 18. f. 5.

Cardium apertum, Chemnitz, Lamarck, Sowerby.

Cardium virgineum, *var.* β, Gmelin.

Hab. Eastern coast of the Island of Luzon, Philippines (found in sandy mud at the depth of about seven fathoms); Cuming.

This very delicate and elegant species varies singularly in colour, some examples being white mottled with pink, whilst others are of a clear orange bay or purple.

Species 64. (Mus. Cuming.)

Cardium tumoriferum. *Card. testâ cordatâ, tumidâ, obliquè quadrilaterali, posticè compressâ, carinâ prominente ab umbonibus ad margines decurrente; radiatim costatâ, costis planulatis, ferè evanidis, interstitiis crebripunctatis; areâ anticâ magnâ, lævi; nivea.*

The blistered Cockle. Shell cordate, swollen, obliquely quadrilateral, posteriorly compressed, with a prominent keel running down from the umbones to the margins; radiately ribbed, ribs flattened, almost obsolete, interstices closely punctured; anterior area large, smooth; snowy white.

Lamarck, Anim. sans vert. (Deshayes' edit.), vol. ii. p. 410.

Hab. New Holland.

This species which I at first hesitated to consider anything more than a variety of the *Cardium hemicardium*, appears to differ in having the anterior area perfectly smooth, whilst the ribs are much less prominently developed. The name given to this shell is suggested by the circumstance which Lamarck relates of its interior being often blistered, and which is certainly very conspicuous in the example before me.

47

65

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del et lith

66

Printed by Reeve Brothers

CARDIUM.

PLATE XIII.

Species 47. (Mus. Cuming.)

CARDIUM LEUCOSTOMA. *Card. testâ depresso-ovatâ, subobliquâ; radiatim costatâ, costis ad tribus et triginta, plano-convexis, peculiariter separatis, lateraliter subtilissimè serratis, costis anticis crenatis; lutescente aut rosaceo-fuscescente, rosaceo aurantioque marmoratâ; intus albâ, marginibus aurantiis, radiisque binis aurantiis infra umbones interdum tinctâ.*

THE WHITE MOUTH COCKLE. Shell depressly ovate, somewhat oblique; radiately ribbed, ribs thirty-three or four in number, flatly convex, peculiarly separated from each other, laterally very finely serrated, anterior ribs crenated; yellowish, or light pinkish brown, marbled with pink and orange; interior white, edges stained with orange, sometimes two faint orange rays beneath the umbones.

BORN, Mus. Cæs. Vind. pl. 3. f. 6 and 7.

Cardium marmoreum, Lamarck.

Hab. Singapore (found in sandy mud at low water); Cuming.

M. Deshayes very properly urges the propriety of restoring to this species the name under which it was originally published by Born, and adopted by Chemnitz. Lister may have used the word "*marmoreum*" in describing it, but the titles applied by the great founder of the Ashmolean collection to his figures of shells, have become obsolete through not being in accordance with the admirable form of nomenclature, now in use, which was subsequently introduced by Linnæus.

The ribs of the *Cardium leucostoma* are developed with peculiar distinctness, owing to the depth and remarkable decision of the grooves which separate them; a character very well portrayed by Mr. Wood in the representation of a specimen which he has erroneously figured in the 'General Conchology,' Pl. LIII. f. 3, for the *Cardium elongatum*. In his account of that species he says, "This is an oblong oval shell, with forty longitudinal ribs according to Bruguière, but our specimens have only thirty-four;" the specimens he had under consideration were beyond doubt *Cardium leucostoma*.

Species 65. (Mus. Cuming.)

CARDIUM ALTERNATUM. *Card. testâ depresso-ovatâ, valdè obliquâ, posticè vix angulatâ, paululum hiante; radiatim costatâ, costis duabus et triginta, angulatis, posticis præcipuè; costis anticis crenatis, posticis muricatis; costarum interstitiis convexis, utrinque impresso-sulcatis; albidâ aut carneâ, luteo maculatâ, margines versus rufescente-fusco interdum vividè tinctâ; marginibus intus violaceo-brunneis.*

THE ALTERNATED COCKLE. Shell depressly ovate, very oblique, posteriorly slightly angulated and a little gaping; radiately ribbed, ribs two and thirty in number, angulated, the posterior especially; anterior ribs crenated, posterior prickly; interstices between the ribs convex, peculiarly impressly grooved down each side; whitish or flesh-colour, spotted with yellow, sometimes richly stained with pinkish brown towards the margins; margins violet-brown interiorly.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Island of Ticao, Philippines (found in coral sand on the reefs); Cuming.

This fine species may be distinguished by its very obliquely curved growth, and by the peculiar sculpture of the interstices between the ribs, which present the appearance of having a minute alternate rib.

Species 66. (Mus. Cuming.)

CARDIUM NUTTALLII. *Card. testâ cordato-ovatâ, Veneriformi, radiatim costatâ, costis duabus et triginta, postremis creberrimis subobsoletis, cæteris rotundatis undique arcuatim noduloso-crenatis; albidâ, epidermide olivaceo-fuscâ crassiusculâ indutâ.*

NUTTALL'S COCKLE. Shell cordately ovate, Venus-shaped, radiately ribbed, ribs two and thirty in number, the extreme posterior ribs very close and almost obsolete, the rest rounded, nodulously crenated in an arched manner throughout; whitish, covered with a rather thick olive-brown epidermis.

CONRAD, Journal Academy Nat. Sci. Philadelphia, p. 229. pl. 17. f. 3.

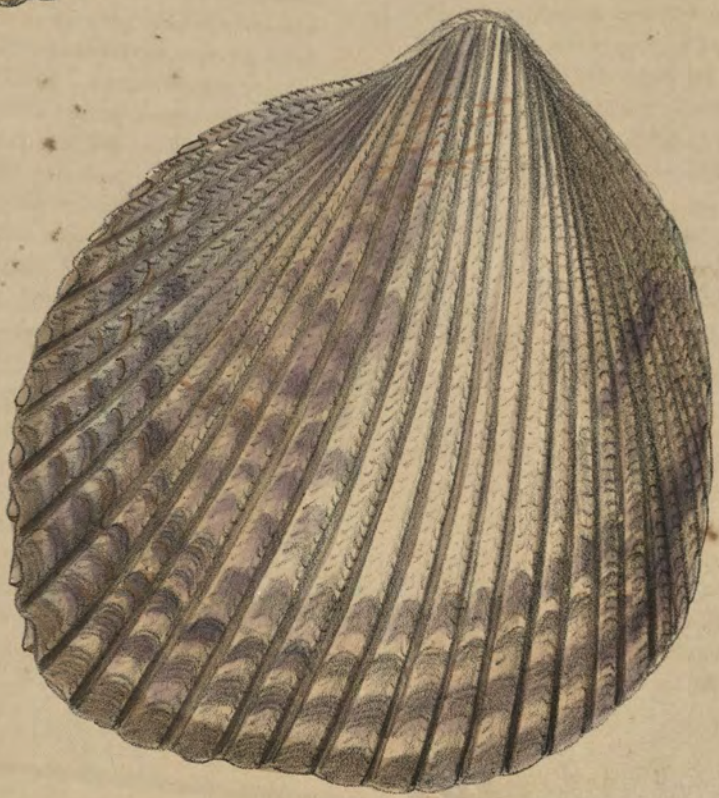
Hab. Sitka, North West coast of America.

This is a noble species though not exhibiting any attractive display of colours; the ribs are rounded, and regularly crenated, in a peculiar arched style, from the margins to the summit of the umbones. All the specimens that have come under my notice are curiously characteristic of several distinct epochs of growth. The first stage of growth is completed within about the radius of an inch from the umbones, and it is succeeded by others at rather less intervals throughout.

67

68

69



70

Sowerby del et lith.

Printed by Reeve Brothers

CARDIUM.

PLATE XIV.

Species 67. (Mus. Cuming.)

CARDIUM DUPUCHENSE. *Card. testâ orbiculari-ovatâ, crassiusculâ, radiatim costatâ, costis quaternis senisve et viginti grandibus, prominentibus, subdistantibus, postremis muricatis, medianis lævibus, posticè subtilissimè crenulatis, cæteris rugoso-crenatis; albâ, epidermide lutescente-fuscâ indutâ, intus vivid purpureo-rubrâ.*

THE DUPUCH COCKLE. Shell orbicularly ovate, rather thick, radiately ribbed, ribs four or six and twenty in number, large, prominent, rather distant, extreme posterior ribs prickly, middle ribs smooth, posteriorly very finely crenulated, the rest rugosely crenated; white, covered with a yellowish brown epidermis, bright purple crimson within.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Dupuch, Torres Straits (found on the reefs at low water); Dring, H. M. S. Beagle.

The sculpture and general external character of this shell are very similar to those of the following species; it is, however, of a shorter and more orbicular form, and singularly characterised by its deep crimson interior.

Species 68. (Mus. Cuming.)

CARDIUM RUGOSUM. *Card. testâ oblongo-ovatâ, crassiusculâ, radiatim costatâ, costis octonis et viginti ad tricenis, interstitiis profundè excavatis; costis postremis muricato-squamosis, medianis lævibus, posticè crenulatis, anticis rugoso-crenatis; albidâ, rufo maculato-fasciatâ.*

THE RUGOSE COCKLE. Shell oblong-ovate, rather thick, radiately ribbed, ribs from eight and twenty to thirty in number, interstices deeply excavated; extreme posterior ribs prickly scaled, middle ribs smooth, posteriorly crenulated, anterior rugosely crenated; white, banded with faint red spots.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. iv. p. 400. *Cardium magnum*, Chemnitz.

Hab. Ceylon, Nicobar, Madagascar, &c.

The deep interstices between the ribs of this species give them an exceedingly prominent character.

Species 69. (Mus. Cuming.)

CARDIUM LÆVIGATUM. *Card. testâ oblongo-ovatâ, tenuiculâ, ventricosâ, lævigatâ, radiatim subobsoletè striatâ, areâ postremâ non striatâ; albidâ, aut flavicante, rufescente pallidissimè fasciatim nebulosâ et radiatâ; intus pallidè aureo-flavicante.*

THE SMOOTH COCKLE. Shell oblong-ovate, rather thin, ventricose, smooth, somewhat obsoletely rayed with striæ, extreme posterior area not striated; whitish or yellowish, clouded with bands of very faint red or flesh tint, radiately lineated with the same; interior tinged with pale golden yellow.

LINNÆUS, Syst. Nat. (not of Lamarck, nor Pennant).

Hab. Island of Margarita, West Indies.

I fully concur with the valuable observations made by M. Deshayes, relative to the *Cardium lævigatum* of Linnæus, in his edition of the 'Anim. sans vert.' (vol. vi. p. 402, *note*). The shell here represented answers in each particular both to his description of that species, and to the figure referred to by him in the 'Encyclopédie Méthodique.' There is certainly a great discrepancy in the localities, but the characters mentioned in the following paragraph are defined in this specimen with particular distinctness; "Elle a une forme ovale, sa surface montre des stries très effacées, obsolètes et longitudinales, qui se terminent sur le bord en un nombre égal de dentelures. La coquille est rousse en dehors avec des taches nuageuses plus ou moins grandes, d'un blanc assez pur; d'autres fois le blanc domine, et la coquille est parsemée de petites taches rousses."

Species 70. (Mus. Saul.)

CARDIUM ANGULATUM. *Card. testâ subquadrato-ovatâ, depressiusculâ, posticè angulatâ, radiatim costatâ, costis quinis et triginta ad quadragenis, angulato-convexis, postremis peculiariter planulatis posticè muricatis, medianis utrinque obliquè crenulatis, anticis creberrimè crenatis; albidâ, purpurascente zonatâ, latere postico intus extusque purpurascente tincto.*

THE ANGULATED COCKLE. Shell rather squarely ovate, rather depressed, posterior side angulated, radiately ribbed, ribs from five and thirty to forty, angularly convex, extreme posterior ribs peculiarly flattened, prickly on the posterior side, middle ribs obliquely crenulated on both sides, anterior ribs very closely crenated; white, zoned with pale purple, posterior side stained with pale purple within and without.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 336.

Hab. —— ?

This species may be recognised first, by the square angulated growth of the posterior side; secondly, by the strong oblique crenulated sculpture of the middle and posterior ribs ("Les cotes du cote posterieur," says Lamarck, "sont comme crénelées obliquement par des tubercules"); and thirdly, by its purple colouring. The ribs are extremely variable in number; in one specimen before me they are thirty-nine to forty in number, in another thirty-five, whilst Lamarck mentions thirty-two only.

71

72

73

74

75

CARDIUM.

PLATE XV.

Species 71. (Plate XV. Fig. 71. and Plate XVI. Fig. 79. Mus. Cuming.)

CARDIUM OBLONGUM. *Card. testâ ovato-oblongâ, ventricosâ, umbones versus subattenuatâ, tenuiculâ, radiatim sulcato-striatâ, areâ posticâ lævi; fuscescente-albidâ, epidermide flavido-fuscâ indutâ.*

THE OBLONG COCKLE. Shell ovately oblong, ventricose, somewhat attenuated towards the umbones, rather thin, radiated with grooved striæ, posterior area smooth; brownish-white, covered with a yellowish brown epidermis.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3254.

Hab. Coast of Devonshire, Britain (dredged from mud at the depth of about twenty fathoms); Cuming.

Lamarck appears to have omitted all notice of this species.

Species 72. (Mus. Cuming.)

CARDIUM ATTENUATUM. *Card. testâ elongato-ovatâ, subobliquâ, umbones versus peculiariter attenuatâ, radiatim subobsoletè sulcato-striatâ, areâ posticâ lævigatâ; vitello-luteâ, rubro tinctâ et maculatâ, maculis postremis saturatioribus, umbonibus rosaceis.*

THE ATTENUATED COCKLE. Shell elongately ovate, somewhat oblique, peculiarly attenuated towards the umbones, rayed with rather obsolete grooved striæ, posterior area smooth; yolk-yellow, stained and spotted with red, posterior spots of a deeper red; umbones pink.

SOWERBY, Pro. Zool. Soc., 1840.

Cardium lævigatum var., Wood, Gen. Conch. pl. 54. f. 2.

Hab. Ceylon, Zanzibar, Philippine Islands, &c.

Perfectly distinct from all the species with which it has been at different times confounded;—*Cardia biradiatum, lævigatum*, and *serratum*.

Species 73. (Mus. Cuming.)

CARDIUM ENODE. *Card. testâ subobliquè ovatâ, radiatim costatâ, costis senis vel octonis et triginta, interstitiis sublatè sulcatis, postremis muricatis, medianis lævibus posticè crenulatis, anticis crenatis; albidâ, posticè rosaceâ, luteo pallidè marmoratâ.*

THE SMOOTH COCKLE. Shell rather obliquely ovate, radiately ribbed, ribs six or eight and thirty in number, interstices rather widely grooved, extreme posterior ribs prickly, middle ribs smooth, crenulated on the posterior side, anterior ribs crenated; whitish, tinged with pink on the posterior side, marbled with faint yellow.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Ceylon.

This species mainly differs from the *Cardium elongatum* in the deep interlocking of the marginal extremities of the ribs, and in the width and decided character of the interstitial grooves.

Species 74. (Mus. Cuming.)

CARDIUM LIMA. *Card. testâ ovatâ, radiatim costatâ, costis quaternis et triginta, rotundatis, brevimuricatis; luteâ, rosaceo tinctâ et maculatâ.*

THE FILE COCKLE. Shell ovate, radiately ribbed, ribs four and thirty in number, rounded, armed with short prickles; yellowish, stained and spotted with pink.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

The short prickles which adorn this shell are not attached to the side of the ribs, as in the *Cardium muricatum*, but to the middle throughout. The pink tinge of colour noticed above is situated more particularly around the umbones.

Species 75. (Mus. Cuming.)

CARDIUM VARIEGATUM *Card. testâ subquadrato-ovatâ, depressâ, posticè subangulatâ, radiatim costatâ, costis quinis senisve et triginta, postremis plano-obsoletis, submuricatis, medianis peculiariter acutangulis, anticis rotundatis, subtilissimè crenatis; albâ, maculis vividè roseis profusè variegatâ.*

THE VARIEGATED COCKLE. Shell somewhat squarely ovate, depressed, posterior slightly angulated, radiately ribbed, ribs eight and thirty in number, the extreme posterior ribs flatly obsolete, slightly prickly, middle ribs peculiarly sharply angled, anterior ribs rounded, very finely crenated; white, profusely variegated with bright rose spots.

SOWERBY, Pro. Zool. Soc., 1840. Conch. Illus. f. 57.

Hab. Island of Ticao, Philippines (found on the reefs at low water); Cuming.

There is a peculiarity in the growth of this shell of which we find a similar indication in the *Cardium angulatum*;—a depressed square-like form, with the above described variation in the structure of the ribs.

76.

77.

78.

79.

80.

82.

81.

G.B.S. del. et lith.

R.B. & R. imp.

CARDIUM.

PLATE XVI.

Species 76. (Mus. Cuming.)

CARDIUM MACULOSUM. *Card. testâ oblongo-ovatâ, ad umbones subattenuatâ, radiatim minutè costatâ, costis octonis et quadraginta, angustis, confertis, postremis subgraniferis; pallidè fulvâ, rufescente punctulatâ, umbonibus rosaceis.*

THE MOTTLED COCKLE. Shell oblong-ovate, somewhat attenuated towards the umbones, radiately minutely ribbed, ribs forty-eight in number, narrow, close-set, extreme posterior ribs slightly graniferous; pale fulvous yellow, dotted with pale red, umbones pink.

WOOD (not of Sowerby), General Conchology, pl. 52. f. 3.
Cardium multistriatum, Sowerby, Pro. Zool. Soc. 1833.
Hab. St. Elena, West Columbia; Cuming?

The ribs of this species, though minute, are of too decided a character to come under the denomination of striæ. If it were not that I have the identical shell before me from which Mr. Sowerby described his *Cardium multistriatum*, I should have hesitated to declare his species synonymous with that under consideration.

Species 77. (Mus. Cuming.)

CARDIUM OXYGONUM. *Card. testâ oblongo-ovatâ, umbones versus attenuatâ, radiatim costatâ, costis quinis et triginta, peculiariter acutangulis, basi posticè subtiliter crenulatis, postremis muricatis, anticis subtilissimè crenatis; albidâ, roseo profusè tinctâ et maculatâ.*

THE SHARP-ANGLED COCKLE. Shell oblong-ovate, attenuated towards the umbones, radiately ribbed, ribs five and thirty in number, peculiarly sharp angled, finely crenulated at the base on the posterior side, extreme posterior ribs prickly, anterior very finely crenated; white, profusely stained and spotted with rose.

SOWERBY, Pro. Zool. Soc., 1840.
Hab. China, and the Philippine Islands; Cuming.

This species exhibits a very peculiar plan of sculpture, the ribs being sharply angled at the summit, and very finely crenulated at the base, on the posterior side.

Species 78. (Mus. Cuming.)

CARDIUM ARENICOLUM. *Card. testâ oblongo-ovatâ, subobliquè arcuatâ, umbones versus attenuatâ, radiatim costatâ, costis senis et quadraginta, convexis, lævibus, postremis squamulosis; albidâ, maculis rubidis variegatâ.*

THE SAND-INHABITING COCKLE. Shell oblong-ovate, somewhat obliquely curved, attenuated towards the umbones, radiately ribbed, ribs forty-six in number, convex, smooth, extreme posterior ribs squamulous; whitish, variegated with large ruddy spots.

Cardium maculosum, Sowerby (not of Wood), Conch. Illus.
Hab. Island of Ticao, Philippines (found among coral sand at the depth of about six fathoms); Cuming.

This is not the *Cardium maculosum*; it is of larger size, longer in proportion, and has an oblique curve in its growth.

Species 79. (Mus. Cuming.)

CARDIUM SULCATUM. *Card. testâ subelongato-ovatâ, umbones versus attenuatâ, ventricosissimâ, radiatim sulcatâ, areâ posticâ lævi, depressâ; ferrugineo-albâ, epidermide flavo-olivaceâ indutâ.*

THE GROOVED COCKLE. Shell elongately ovate, attenuated towards the umbones, very ventricose, radiately grooved, posterior area smooth, depressed; rusty white, covered with a yellowish olive epidermis.

GMELIN, Syst. Nat. p. 3254.
Lamarck, Anim. sans vert. vol. vi. p. 401.
Cardium flavum, Born.
Cardium serratum, Bruguière.
Hab. Mediterranean.

The sculpture of this species is of such a very similar character to that of the *Cardium oblongum*, that I at first doubted whether they be truly distinct. Upon subsequent examination I find they differ constantly in form, the *Cardium sulcatum* being more elongated and so much more full and ventricose about the umbones.

Species 80. (Mus. Cuming.)

CARDIUM IMPOLITUM. *Card. testâ oblongo-ovatâ, ventricosâ, umbones versus attenuatâ, radiatim costatâ, costis quinis et triginta, convexis, anticis liris parvis subobsoletis decussatim clathratis; flavicante-albâ, rufo-fuscescente obscurè fasciatâ et maculatâ.*

THE UNPOLISHED COCKLE. Shell oblong-ovate, ventricose, attenuated towards the umbones, radiately ribbed, ribs five and thirty in number, convex, anterior ribs rather obsoletely latticed across with small ridges; yellowish white, banded and spotted with faint reddish brown.

SOWERBY, Pro. Zool. Soc., 1840.
Hab. China.

This shell is of a peculiar ghastly yellow colour.

Species 81. (Mus. Cuming.)

CARDIUM LACUNOSUM. *Card. testâ ovatâ, ventricosâ, interdum subobliquâ, radiatim costatâ, costis quaternis et triginta, lateraliter cavatis, postremis tuberculato-muricatis, medianis lævibus, utrinque subtilissimè crenulatis, anticis arcuato-crenatis, costarum interstitiis profundè canaliculatis; albidâ aut flavicante, rubido variegatâ.*

THE GUTTERED COCKLE. Shell ovate, ventricose, sometimes rather oblique, radiately ribbed, ribs four and thirty in number, laterally hollowed, extreme posterior ribs armed with prickly tubercles, middle ribs smooth, very finely crenulated on both sides, anterior ribs arcuately crenated; interstices between the ribs deeply canaliculated; whitish or yellowish variegated with red.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The ribs are hollowed at the sides, in such a manner that their flattened summit forms a protruding crenulated ledge both posteriorly and anteriorly.

Species 82. (Mus. Saul.)

CARDIUM RASTRUM. *Card. testâ suborbiculari, tenuiculâ radiatim costatâ, costis nonis et triginta, tredecim anticis anticè muricatis, deinde duabus, interdum tribus, utrinque muricatis, cæteris posticè muricatis; fuscescente-albâ, rubido-fusco fasciatâ et maculatâ.*

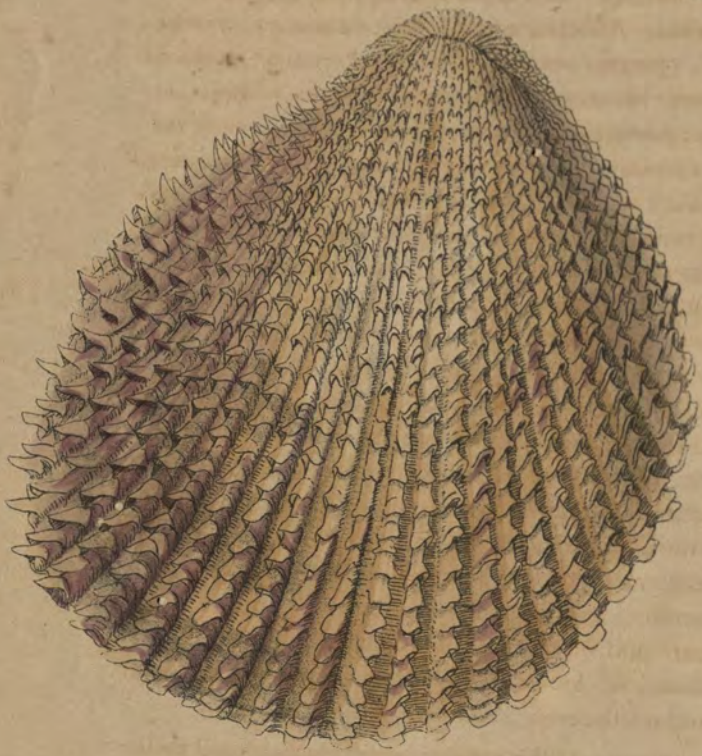
THE HARROW COCKLE. Shell nearly orbicular, rather thin, radiately ribbed, ribs thirty-nine in number, the first thirteen anterior ribs prickly on the anterior side, then two, sometimes three, prickly on both sides, the rest prickly on the posterior side; brownish white, banded and spotted with reddish-brown.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The sculpture of this shell is arranged very much after the style of the *Cardium muricatum*.

83



84

85

86

Sowerby del sculp et lith.

Reeve Brothers cupro-lith.

CARDIUM.

PLATE XVII.

Species 83. (Mus. Saul.)

CARDIUM DESHAYESII. *Card. testâ rotundato-cordatâ, gibbosâ, subæquilaterali; radiatim costatâ, costis duabus et viginti, squamarum brevium cochleariformium, umbones versus fornicantium, serie unicâ medio armatis, squamis anticis latioribus, depressiusculis; costarum interstitiis transversim corrugato-striatis; pallidè ferrugineo-fuscescente.*

DESHAYES' COCKLE. Shell rotundately cordate, gibbous, nearly equilateral; radiately ribbed, ribs two and twenty in number, armed down the middle with a row of short spoon-shaped scales, vaulting over towards the umbones, anterior scales wider and rather depressed; interstices between the ribs transversely marked with wrinkled striæ; pale rusty brown.

PAYRANDEAU, Cat. Moll. de Corse.

Hab. Islands of Corsica, Sicily, &c.; Mediterranean.

This species is certainly distinct from any of the prickly group which inhabit the Mediterranean; the scales being of a peculiar spoon-shape, not papilliferous, and, contrary to the usual order of scales, arched over, or back as it were, towards the umbones.

Species 84. (Mus. Cuming.)

CARDIUM ISOCARDIA. *Card. testâ obliquè cordatâ, gibbosâ; radiatim costatâ, costis tribus vel quaternis et triginta, squamiferis, squamis fornicatis, elevatiusculis, posticè subplanatis, squamis anticis plus minusve obtusocallosis; stramineâ, purpureo-fuscescente hic illic nebulosa; intus, umbones versus præcipuè, vividè purpureococcineâ.*

THE EQUI-HEART COCKLE. Shell obliquely heart-shaped, gibbous; radiately ribbed, ribs three or four and thirty in number, squamiferous, scales vaulted, rather elevated, slightly flattened on the posterior side, anterior scales more or less obtusely thickened; pale straw colour, stained here and there with purple-brown, interior bright purple scarlet, especially towards the umbones.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3249.

Hab. Island of Nevis, West Indies (dredged from sandy mud at a depth of from six to ten fathoms).

Little need be added to assist the identification of this magnificent and well known shell, except a caution against confounding it with the *Cardium consors*, from which it differs in the particulars noted in the description of that species, (Sp. 86).

Species 85. (Mus. Cuming.)

CARDIUM ORBITA. *Card. testâ ovali, gibbosâ, posticè subangulatâ; radiatim costatâ, costis duabus et quadraginta, quarum anticis rotundatis, crenatis, medianis utrinque obtuso-squamatis, squamis parvis, alternis, obliquis, posticis posticè squamatis, squamis majoribus, brevibus obtusis; costarum interstitiis, præcipuè medianis, profundè orbitatis; albidâ, fulvo aut purpurascente pallidè variegatâ, intus albâ, marginibus vividè purpureis.*

THE DEEP-RUT COCKLE. Shell oval, gibbous, slightly angulated on the posterior side; radiately ribbed, ribs two and forty in number, of which the anterior are rounded and crenated, the middle are obtusely scaled on each side, the scales being small, alternate, and oblique, and the posterior are scaled on the posterior side, the scales being larger, but still short and obscure; interstices between the ribs, especially those of the middle ribs, deeply excavated or rutted; whitish, palely variegated with fulvous yellow or purple, interior white, margins richly stained with purple.

BRODERIP and SOWERBY, Pro. Zool. Soc., 1833.

Hab. Island of Annaa, Pacific Ocean (found in fine coral sand on the reefs); Cuming.

The sculpture of this species is well characterized by the oblique alternately diverging minute scales which ornament the middle ribs.

There is another remarkably fine specimen in the collection of Wm. Metcalfe, Esq.

Species 86. (Mus. Cuming.)

CARDIUM CONSORS. *Card. testâ obliquè cordatâ, gibbosissimâ; radiatim costatâ, costis duabus et triginta, squamiferis, squamis erecto-fornicatis, numerosis, creberrimis, posticè compresso-planis, squamis anticis obtuso-callosis; albicante, vel stramineâ, fusco-rufescente, posticè præcipuè, tinctâ et marmoratâ; intus purpurascente.*

THE CONSORT COCKLE. Shell obliquely heart-shaped, very gibbous; radiately ribbed, ribs two and thirty in num-

ber, squamiferous, scales erectly vaulted, numerous, close-set, compressly flattened on the posterior side, anterior scales obtusely thickened; whitish or straw colour, stained and marbled, especially on the posterior side, with brownish red, interior purple.

BRODERIP and SOWERBY, Pro. Zool. Soc., 1833.

Hab. St. Elena and Guacomayo, West Columbia (found in sandy mud at a depth of from six to eleven fathoms); Cuming.

This extremely interesting species differs from the *Cardium isocardia* in having the scales much more numerous and close-set, and peculiarly compressly flattened one upon the other on the posterior side.

87

88

89

90

91

92

93

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del sculp. et lith.

Reeve Brothers cupro-lith.

CARDIUM.

PLATE XVIII.

Species 87. (Mus. Cuming.)

CARDIUM FOVEOLATUM. *Card. testâ oblongo-ovatâ, compressiusculâ, radiatim costatâ, costis tribus et quadraginta, quarum postremis subangulatis, muricatis, medianis lævibus, anticis crenatis; albidâ, costis lineis pallidè luteo-fuscis decussatis, areâ posticâ maculis nigris parvis ornatâ; intus albâ, maculis pallidè nigris tinctâ.*

THE SMALL-PITTED COCKLE. Shell oblong-ovate, rather compressed, radiately ribbed, ribs three and forty in number, of which the extreme posterior are slightly angulated and prickly, the middle smooth, and the anterior crenated; whitish, ribs crossed at intervals with pale yellowish-brown lines, posterior area ornamented with small black spots; interior white, stained with pale black spots.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Swan River.

The black spots which are faintly seen in the interior of each valve are still more faintly perceptible on the outside; looking as if they were concealed between the inner and outer layers of the shell.

Species 88. (Mus. Hanley.)

CARDIUM UNICOLOR. *Card. testâ oblongo-ovatâ, umbones versus subattenuatâ, radiatim costatâ, costis octonis et quadraginta rotundatis lævibus, anticis subtilissimè crenulatis; albidâ, purpureo obscurè maculatâ, intus pallidè rosaceâ.*

THE UNICOLOURED COCKLE. Shell oblong-ovate, somewhat attenuated towards the umbones, radiately ribbed, ribs eight and forty in number, rounded, smooth, the anterior very finely crenulated; whitish, very obscurely spotted with purple, interior tinged with pink.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Island of Ticao, Philippines (found in sandy mud at low water); Cuming.

The ribs of this species are very numerous considering the distinctness with which they are developed; and the interior of the shell is characteristically tinged in the interior with rose pink.

Species 89. (Mus. Hanley.)

CARDIUM RADIATUM. *Card. testâ subquadrato-ovatâ, radiatim subobscurè costatâ, costis duabus et quinquaginta, propè ad umbones ferè obsoletis; incarnato-albicante, fuscescente pallidè concentricè fasciatâ, radio lato purpureo conspicuo ad utremque umbonem intus extusque tinctâ.*

THE RADIATED COCKLE. Shell somewhat squarely ovate, radiately rather obscurely ribbed, ribs two and fifty in number, nearly obsolete at the umbones; fleshy white, concentrically banded with pale brown, stained within and without at each umbone with a conspicuous purple ray.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

This species has been probably confounded hitherto with the *Cardium tenuicostatum*, from which it differs somewhat in form, besides being of a more solid structure.

Species 90. (Mus. Cuming.)

CARDIUM ASIATICUM. *Card. testâ globosâ, tenuiculâ, radiatim costatâ, costis septenis et triginta, angustis elevatiusculis, circa umbones lævibus, margines versus posticis lamelliferis, cæteris punctis solidis eminentibus copiosis peculiariter asperatis; incarnato-lacteâ, costarum interstitiis ferrugineo-fuscescentibus, intus albidâ, conspicuè sulcatâ, marginibus postremis roseo-purpureis.*

THE ASIATIC COCKLE. Shell globose, rather thin, radiately ribbed, ribs seven and thirty in number, narrow, rather elevated, smooth round about the umbones, towards the margins the posterior lamelliferous, the rest peculiarly roughened with a profusion of solid raised dots; fleshy cream colour, interstices between the ribs pale rusty brown, interior white, conspicuously grooved, extreme posterior edges rose purple.

BRUGUIERE, Enc. Méth. vers., vol. i. p. 124.

Hab. China.

This interesting species is singularly characterized by the roughened surface of the middle and anterior ribs. It may also be easily distinguished from the following species by its orbicular form, and by the posterior ribs only being lamellated.

Species 91. (Mus. Cuming.)

Cardium fimbriatum. *Card. testâ transversè ovatâ, posticè subproductâ; radiatim costatâ, costis senis et triginta, angustis, lævibus, prope ad margines lamellâ serratâ fimbriatis; lacteâ, rosaceo pallidè tinctâ.*

The frilled Cockle. Shell transversely ovate, somewhat produced posteriorly; radiately ribbed, ribs thirty-six in number, narrow, smooth, frilled near the margins with a serrated lamella; cream colour, palely tinged with pink.

Wood, General Conchology, p. 234. pl. 56. f. 4, 5.

Hab. China.

Lamarck has always been referred to as the author of this very characteristic species, but it was first described, and most accurately figured, in the year 1815, by our esteemed countryman Mr. Wood. His excellent representation of it, is, I believe, the only one that has been hitherto published, for the shell figured under the above name by Mr. Gray, in the Zoology of Beechey's Voyage, appears by its orbicular form to be only a young specimen of the *Cardium Asiaticum*. The *Cardium fimbriatum* in a young state, before the development of the marginal lamellæ, would still be of a transverse, posteriorly produced, form. It is perfectly distinct from the preceding species both in size and shape, as well as in the arrangement and character of its external sculpture.

Species 92. (Mus. Cuming.)

Cardium pallidum. *Card. testâ subquadrato-ovatâ, depressiusculâ, posticè paululum angulato-productâ; radiatim tenuicostatâ, costis numerosissimis, nunc duabus tribusve et quadraginta, nunc duabus tribusve et quinquaginta, lævibus subcarinæformibus; pallidâ.*

The pale Cockle. Shell somewhat squarely ovate, rather depressed, posteriorly a little angularly produced; radiately finely ribbed, ribs very numerous, sometimes two or three and forty, sometimes two or three and fifty in number, smooth, somewhat keel-shaped; pale.

Reeve, Pro. Zool. Soc., 1845.

Hab. Bay of Manila (found in sandy mud at a depth of from four to five fathoms); Cuming.

This is another species which has been probably confounded with the *Cardium tenuicostatum*, an examination of several specimens assures me, however, that it is distinct. It is more depressed, has not the slightest indication of the waved flesh-colour spots which adorn that species, and is altogether different.

Species 93. (Mus. Cuming.)

Cardium Lamarckii. *Card. testâ transversè ovatâ, subcordatâ, tenuiculâ, ventricosâ, posticè obliquè producta; radiatim costatâ, costis duabus tribusve et viginti, latiusculis, obtusis, in aream posticam subevanidis; transversim undato-striatâ; albidâ, ferrugineo-fusco cæruleoque variegatâ, umbonibus livido-fuscis, intus, postice præcipuè, livido-fuscescente.*

Lamarck's Cockle. Shell transversely ovate, subcordate, rather thin, ventricose, posteriorly obliquely produced; radiately ribbed, ribs two or three and twenty in number, rather broad, obtuse, indistinct upon the posterior area; transversely striated in a waved manner; whitish, variegated with blue and rusty brown, umbones livid brown, interior livid brown especially towards the posterior side.

Cardium rusticum, Lamarck (not of Linnæus).

Cardium edule, var., Deshayes.

Hab. Coast of Devonshire, Britain (found in the sand at low water).

This shell is the type of that extreme variety of the *Cardium edule* which Lamarck distinguished, after Chemnitz, by the title of *Cardium rusticum*; it is not, however, the species which Linnæus described under that name (for which see Plate III. Sp. 16), as Lamarck himself admitted, "Je n'ai pas encore reconnu le *Card. rusticum* de Linné."

94

95

96

97

98

99

100

101

102

103

CARDIUM.

PLATE XIX.

Species 94. (Mus. Cuming.)

CARDIUM EICHWALDII. *Card. testâ ovatâ, crassiusculâ, valdè gibbosâ posticè subangulatâ, fortiter costatâ, costis duabus tribusve et viginti, plus minusve indistinctè tuberculatis; transversim rugoso-striatâ; albidâ, intus albâ, posticè livido-fuscescente exiliter tinctâ.*

EICHWALD'S COCKLE. Shell nearly ovate, rather thick, very gibbous, slightly angulated on the posterior side, strongly ribbed, ribs about two or three and twenty in number, more or less indistinctly tuberculated; transversely roughly striated; whitish, interior white, faintly stained with livid brown on the posterior side.

Cardium rusticum, Eichwald (not of Linnæus, nor Lamarck) Fauna Caspio-Caucasia. pl. 38. f. 24–27.

Hab. Caspian Sea.

This species, which is intermediate between the *Cardia edule* and *Lamarckii*, should, I think, be distinguished on account of its tuberculated structure, and further peculiarity of form.

Species 95. (Mus. Cuming.)

CARDIUM NIVALE. *Card. testâ trigono-cordatâ, margines versus subcompressâ, posticè angulatâ, plano-depressâ; radiatim planicostatâ, costis quinis et triginta, areæ posticæ lævibus, irregularibus, nunc angustis, nunc latiusculis, anticis subtilissimè noduloso-crenatis; lucido-albâ, maculis niveis opacis, in aream posticam præcipuè, profusè ornatâ.*

THE SNOW-SPOTTED COCKLE. Shell triangularly cordate, a little compressed towards the margins, angulated and flatly depressed on the posterior side; radiately flatly ribbed, ribs five and thirty in number, those of the posterior area smooth, irregular, sometimes narrow, sometimes rather broad, the anterior very finely nodulously crenated; transparent white, profusely ornamented, on the posterior area especially, with opake snowy spots.

REEVE, Pro. Zool. Soc., 1845.

Hab. Island of Corrigidor, Philippines (dredged from coral sand at the depth of eight fathoms); Cuming.

An interesting new species, intermediate in form between the *Cardia fragum* and *hemicardium*.

Species 96. (Mus. Cuming.)

CARDIUM CASPIUM. *Card. testâ transversè ovatâ, posticè hiante; radiatim costatâ, costis lævigatis, plano-depressis, quasi detritis; albidâ, costis flavo- aut rubido-fuscescentibus, intus rubicundâ.*

THE CASPIAN COCKLE. Shell transversely ovate, posteriorly gaping; radiately ribbed, ribs smooth, flatly depressed, as if worn down; whitish, ribs yellowish or reddish brown, interior reddish.

Corbula Caspia. Monodacna Caspia.—Eichwald, Fauna Caspio-Caucasia, p. 274. pl. 39. f. 4 *a, b, c.*

Hab. North coast of the Caspian Sea; Eichwald.

The ribs of this species being somewhat broad and peculiarly flattened, have the appearance of coloured rays diverging from the umbones.

Species 97. (Mus. Cuming.)

CARDIUM AUSTRALE. *Card. testâ obliquè ovatâ, umbones versus attenuatâ; tenuissimè costatâ, costis numerosissimis; albidâ, roseo-purpureo pallidè maculatâ, umbonibus purpureis, areâ postremâ purpureo fasciatâ, intus luteâ, radio unico purpurascente infra umbonem utriusque valvæ divergente.*

THE SOUTHERN COCKLE. Shell obliquely ovate, attenuated towards the umbones; very finely ribbed, ribs very numerous; whitish, faintly spotted with pinkish purple, umbones purple, extreme posterior area banded with purple, interior yellow, with a single purple ray diverging beneath the umbo in each valve.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Australia.

This shell, which has a peculiarly oblique form, is very nearly allied to the *Cardium tenuicostatum*.

Species 98. (Mus. Cuming.)

CARDIUM PULCHRUM. *Card. testâ ovatâ, umbones versus subattenuatâ; radiatim tenuissimè sulcatâ; incarnato-fuscescente, prope margines albâ maculis roseis quadratis pulchrè ornatâ, umbonibus purpureis, intus roseo concentricè variegatâ.*

THE PRETTY COCKLE. Shell ovate, somewhat attenuated towards the umbones; radiately very finely grooved;

fleshy brown, white towards the margins, prettily ornamented with square rose spots, umbones purple, interior concentrically variegated with rose.

Cardium australe, var., Sowerby.

REEVE, Pro. Zool. Soc., 1845.

Hab. China.

This interesting species is not only distinct from the preceding in form, but in sculpture and colouring.

Species 99. (Mus. Hanley.)

CARDIUM NEBULOSUM. *Card. testâ ovatâ, subPectiniformi, radiatim costatâ, costis duabus tribusve et quadraginta, convexis, lævibus, posticè subtilissimè crenulatis; albidâ, maculis fuscescentibus nebulosâ, costis lineis rubris transversis hic illic irregulariter pictis; intus albâ, infra umbones roseo tinctâ, maculisque purpureo-violaceis prope margines vividè ornatâ.*

THE CLOUDED COCKLE. Shell ovate, somewhat Pecten-shaped, radiately ribbed, ribs two or three and forty in number, convex, smooth, posteriorly very finely crenulated; whitish, clouded with pale brown spots, ribs irregularly painted here and there with red transverse lines; interior white, stained with pink beneath the umbones, ornamented near the margins with blotches of bright purple violet.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The external painting of this shell is very similar to that of the *Pectunculus pectinatus*.

Species 100. (Mus. Cuming.)

CARDIUM SUBRETUSUM. *Card. testâ oblongo-cordatâ, valdè tumidâ, posticè concavo-depressâ; radiatim planicostatâ, costis medianis nodulosis, costarum omnium interstitiis creberrimè puncturatis; lunulâ subexcavatâ, callositate ferè obsoletâ intrudâ; intus extusque albâ.*

THE SOMEWHAT BLUNT COCKLE. Shell oblong-cordate, very much swollen, posteriorly concavely depressed; radiately flatly ribbed, middle ribs nodulous, interstices between all the ribs very closely punctured; lunule slightly excavated, with a somewhat obsolete callosity intruding; white within and without.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 24.

Hab. —— ?

Chiefly distinguished from the *Cardium retusum* by the middle ribs being noduled, and the interstices between the whole being merely finely punctured.

Species 101. (Mus. Cuming.)

CARDIUM MORTONI. *Card. testâ subobliquè ovatâ, tenuiculâ, lævigatâ, albidâ, lævissimè erosâ, epidermide luteo-fuscescente margines versus indutâ; intus lutescente.*

MORTON'S COCKLE. Shell somewhat obliquely ovate, rather thin, smooth, whitish, very slightly eroded, covered towards the margins with a yellowish-brown epidermis; interior yellowish.

CONRAD, Journ. Acad. Nat. Sci. Phil., vol. vi. pl. 11. f. 5-7.

Hab. United States.

A thin opake white shell, slightly eroded towards the umbones, and covered with a yellowish-brown epidermis towards the margins.

Species 102. (Mus. Saul.)

CARDIUM PULICARIUM. *Card. testâ suborbiculari, Pectiniformi, radiatim costatâ, costis quaternis et triginta, anticis muricatis, medianis utrinque crenulatis, posticis crenatis; luteo- vel incarnato-albâ, maculis parvis nigro-fuscis sparsim tinctâ, intus rosaceo-albâ, marginibus cardinem versus roseo-purpureis.*

THE FLEA-SPOTTED COCKLE. Shell somewhat orbicular, Pecten-shaped, radiately ribbed, ribs four and thirty in number, the anterior prickly, the middle crenulated on both sides, and the posterior crenated; yellowish or fleshy white, stained with scattered blackish brown spots, interior pinkish white, margins rose-purple towards the hinge.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A characteristic little shell, which I cannot refer to any described species.

Species 103. (Mus. Cuming.)

CARDIUM RETUSUM. *Card. testâ gibboso-cordatâ, subobliquâ, posticè concavo-depressâ; radiatim costatâ, costis convexis, lævibus, interstitiis fortiter clathratis, lunulâ profundè excavatâ, callositate conspicuâ intrudâ; intus extusque albâ.*

THE BLUNT COCKLE. Shell gibbously cordate, somewhat oblique, posteriorly concavely depressed; radiately ribbed, ribs convex, smooth, interstices strongly latticed, lunule deeply excavated, with a conspicuous callosity intruding; white within and without.

LINNÆUS, Syst. Nat. (Gmelin's edit.), p. 3245.

Hab. China, &c.

This well-known species is called by French conchologists "The Diana's Heart Cockle."

104

105

106

107

108

109

110

111

112

113

Sowerby del sculp et lith.

Reeve Brothers cupro-lith.

CARDIUM.

PLATE XX.

Species 104. (Mus. Cuming.)

CARDIUM ELENENSE. *Card. testâ tenui, ovatâ, umbones versus subattenuatâ; transversim et longitudinaliter striatâ, striis transversis subtilissimis confertis, longitudinalibus latiusculis subdistantibus; pallidè fulvâ, punctis minutis rubido-fuscis trigono-maculatâ, aream postremâ immaculatâ; umbonibus livido-purpurascentibus, intus fusco-rubente fasciatâ.*

THE ELENA COCKLE. Shell thin, ovate, somewhat attenuated towards the umbones; transversely and longitudinally striated, transverse striæ very fine and close-set, longitudinal striæ rather broad and comparatively distant; pale fulvous, painted with triangular spots of reddish brown dots, posterior area unspotted; umbones livid purple, interior banded with brownish red.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 58.

Hab. St. Elena, West Columbia (found in sandy mud at the depth of seven fathoms); Cuming.

The minute dotted painting of this shell is one of its characteristic features.

Fig. 105.—As the shell here represented proves to be merely an obscure specimen of the *Cardium papillosum*, I take the opportunity of inserting a rare and very distinct species omitted in the illustration.

Species 105. (Mus. Linn. Soc.)

CARDIUM RIGIDUM. *Card. testâ obliquè ovatâ, radiatim fortiter costatâ, costis tuberculis compressis creberrimè armatis; albâ, fuscescente pallidè tinctâ.*

THE ROUGH COCKLE. Shell obliquely ovate, radiately strongly ribbed, ribs armed with very close-set compressed tubercles; white, faintly tinged with brown.

WOOD, General Conchology, p. 236. pl. 57. f. 2, 3.

Hab. —— ?

There are three odd valves of this remarkable species, in the Museum of the Linnæan Society, from the collection of Sir Joseph Banks, and I have not seen any other shell at all approaching to it. The ribs are surmounted with very close tubercles, worn away towards the umbones.

Species 106. (Mus. Saul.)

CARDIUM FERRUGINOSUM. *Card. testâ suborbiculari, posticè depressiusculâ, radiatim costatâ, costis tribus et viginti quarum senis postremis planulatis, subtilissimè muricatis, medianis lævibus, anticis crenatis; luteo-albidâ, maculis ferrugineis hic illic aspersâ.*

THE RUST-SPOTTED COCKLE. Shell somewhat orbicular, rather depressed posteriorly; radiately ribbed, ribs three and twenty in number, of which the six extreme posterior are flattened, and very finely muricated along the edge, the middle smooth, and the anterior crenated; yellowish white, sprinkled here and there with rusty spots.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

The ribs are rather strongly grooved out in the interior of the shell, and on the posterior side they are a little divided at the extremity, as in the *Cardium ringens*.

Species 107. (Mus. Cuming.)

CARDIUM EXASPERATUM. *Card. testâ subquadrato-globosâ, radiatim liratâ, liris ad centenis minutissimis creberrimis, tertiâ quâque erecto-squamatâ, quasi spinosâ, duabus intervenientibus minutè brevisquamatis; niveâ, lateribus roseo-aurantiis; lunulâ vividè aurantiâ, intus albâ, marginibus minutissimè serratis.*

THE SHARP COCKLE. Shell somewhat squarely globose, radiately ridged, ridges about a hundred in number, very minute, very closely arranged, every third ridge, surmounted by a row of erect spine-like scales, the two intervening ridges by a row of minute short scales; snowy white, sides tinged with pinkish orange, lunule bright orange, interior white, margins very minutely serrated.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 37.

Hab. Swan River; Lieut. Collie.

An interesting and beautiful species, exhibiting that remarkable novelty of design which is so characteristic of the Australian Fauna.

Species 108. (Mus. Cuming.)

CARDIUM FRAGILE. *Card. testâ subobliquè ovatâ, depressâ, tenui, papyraceâ; radiatim costatâ, costis septenis et viginti, lævibus vel obsoletè tuberculatis; albâ.*

THE FRAGILE COCKLE. Shell somewhat obliquely ovate, depressed, thin, papyraceous; radiately ribbed, ribs seven and twenty in number, smooth, or obsoletely tuberculated; white.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A very delicate fragile papyraceous shell.

Species 109. (Mus. Cuming.)

CARDIUM STELLATUM. *Card. testâ obliquè quadratâ, gibbosâ, valdè inæquilaterali, latere antico brevissimo, postico angulato; radiatim planicostatâ, costis tribus vel quaternis et viginti, utrinque subtiliter crenulatis, costis anticis noduliferis; ferrugineo-fuscâ, maculis perpaucis albis stellatâ.*

THE STARRY COCKLE. Shell obliquely quadrate, gibbous, very inequilateral, anterior side very short, posterior angulated; radiately flatly ribbed, ribs three or four and twenty in number, finely crenulated on each side, anterior ribs noduliferous; rusty brown, starred with a few white spots.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A square gibbous shell of which the anterior side is remarkably short and contracted.

Species 110. (Mus. Cuming.)

CARDIUM FORNICATUM. *Card. testâ subquadratâ, anticè rotundatâ, posticè concavo-angulatâ; radiatim costatâ, costis quinis et triginta, creberrimè imbricato-squamatis, ad latera minutissimè crenulatis, costarum interstitiis subprofundè excavatis, transversim subtiliter striatis; albidâ, purpurascente nodulosâ, intus vividè aurantiâ, margines versus roseo-purpureâ.*

THE VAULTED COCKLE. Shell somewhat square, rounded anteriorly, concavely angulated posteriorly; radiately ribbed, ribs five and thirty in number, very closely imbricately scaled, minutely crenulated at the sides, interstices between the ribs rather deeply excavated, transversely finely striated; whitish, clouded with pale purple, interior bright orange, pinkish purple towards the margins.

SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 50.

Hab. —— ?

The chief peculiarity of this remarkable shell, which is at present unique in the collection of H. Cuming, Esq., consists in the ribs having a double pattern of sculpture, being surmounted with a close-set row of small vaulted scales, whilst the sides are minutely crenulated.

Species 111. (Mus. Cuming.)

CARDIUM PAPILLOSUM. *Card. testâ suborbiculari, convexâ, paululum obliquâ, radiatim costatâ, costis quaternis et viginti, papillis brevibus undique echinatis, costarum interstitiis transversim impresso-punctatis; albidâ, ferrugineo-fusco tinctâ et sparsim maculatâ.*

THE PAPILLOSE COCKLE. Shell somewhat orbicular, convex, a little oblique; radiately ribbed, ribs four and twenty in number, echinated throughout with short papillæ, interstices between the ribs transversely impressly punctured; whitish, stained and sparingly spotted with rusty brown, interior white, reddish brown on the posterior side.

POLI, Testacea utriusque Siciliæ, pl. 16. f. 2–4.
Cardium Polii, Payrandeau.

Hab. Mediterranean.

A well-known species, which may be easily recognised by the papilliferous sculpture of the ribs, and the peculiar transverse groove-like punctures in the interstices.

Species 112. (Mus. Cuming.)

CARDIUM CRENULATUM. *Card. testâ transversè ovatâ, subæquilaterali, radiatim costatâ, costis vicenis convexo-planatis, rugis transversis creniformibus sculptis; albidâ, ferrugineo-fusco posticè tinctâ et maculatâ*

THE CRENULATED COCKLE. Shell transversely ovate, nearly equilateral; radiately ribbed, ribs about twenty in number, convexly flattened, sculptured with transverse creniform wrinkles; whitish, stained and spotted on the posterior side with rusty brown.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 407.
Cardium edule, var., Deshayes.

Hab. Plymouth, Britain.

This is one of several species, which, in my opinion, have been erroneously confounded together as varieties of the *Cardium edule*.

Species 113. (Mus. Cuming.)

CARDIUM BELTICUM. *Card. testâ tenuiculâ, transversè ovatâ, subobliquâ, posticè compresso-productâ; radiatim costatâ, costis ad tricenis, planatis, angustis, lævibus, subdistantibus; albicante, costis medianis posticisque nigro-fuscis.*

THE BALTIC COCKLE. Shell rather thin, transversely ovate, somewhat oblique, posteriorly compressly produced; radiately ribbed, ribs about thirty in number, flattened, narrow, smooth, rather distant; whitish, middle and posterior ribs blackish brown.

BECK, MSS. Mus. King of Denmark.

Hab. Baltic Sea.

May be distinguished by its narrow, flattened, smooth, distant, dark brown ribs, which are very conspicuous upon the light ground of the shell.

114

115

116

117

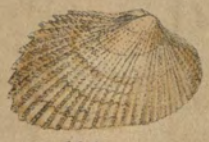
118

119

120

121

122



123

Sowerby del sculp. et lith.

Reeve Brothers cupro-lith.

CARDIUM.

PLATE XXI.

Species 114. (Mus. Cuming.)

CARDIUM UNIMACULATUM. *Card. testâ lateraliter cordiformi, medio valdè convexâ, carinatâ, carinâ spinoso-dentatâ, lateribus plano-compressis, antico radiatim sulcato, postico radiatim planilirato, liris medio minutissimè elato-punctatis; albidâ, maculis niveis opacis aspersâ, roseo circa lunulam posticam vividè tinctâ.*

THE SINGLE-SPOTTED COCKLE. Shell laterally heart-shaped, very convex in the middle, keeled, keel spinosely dentated, sides flatly compressed, anterior radiately grooved, posterior radiately flatly ridged, ridges armed down the middle with minute raised dots; whitish, sprinkled with opake snowy spots, vividly stained around the posterior lunule with pink.

BRODERIP and SOWERBY, Pro. Zool. Soc., 1833.

Hab. Island of Annaa, Pacific Ocean (found in coral sand on the reefs); Cuming.

A front view of this shell is given by Mr. Sowerby, jun., in his Conch. Illus. f. 1 * *, as the young of the *Cardium cardissa*; it is, however, maturely grown, and quite distinct from that species; Mr. Cuming collected it at the above named locality in great abundance.

Species 115. (Mus. Cuming.)

CARDIUM RINGICULUM. *Card. testâ transversè ovatâ, lateribus hiantibus, antico brevissimo, postico elongato; radiatim costatâ, costis quaternis quinisve, angustis, rudis, subinconspicuis, anticis subtiliter crenulatis, interstitiis posticis prope margines incisis; lutescente-albâ, intus interdum posticè vividè rosaceâ.*

THE LITTLE GRINNING COCKLE. Shell transversely ovate, sides gaping, anterior very short, posterior elongated; radiately ribbed, ribs four or five and twenty in number, narrow, rude, rather inconspicuous, anterior ribs finely crenulated, posterior interstices cut near the margins; yellowish-white, interior sometimes brightly stained with rose on the posterior side.

SOWERBY, Pro. Zool. Soc., 1840.

Hab. Islands of Nevis and St. Vincent, West Indies (found in sandy mud); Gùilding.

There seems to be an error in the locality quoted by Mr. Sowerby for this interesting little species.

Fig. 116. The shell here represented proves upon further examination to be a variety of the *Cardium crenulatum* in which the creniform wrinkles of the ribs are almost obsolete.

Species 117. (Mus. Cuming.)

CARDIUM OBOVALE. *Card. testâ oblongo-cordatâ, obliquâ, gibbosâ, lateribus brevissimis; radiatim costatâ, costis duabus et viginti, lateralibus depresso-planis, anticis posticè crenulatis, medianis rotundatis, undique creberrimè crenatis, interstitiis omnibus transversim impresso-cancellatis; albidâ, fuscescente umbones versus pallidissimè tinctâ.*

THE OBLONG-OVAL COCKLE. Shell oblong, heart-shaped, oblique, gibbous, sides very short; radiately ribbed, ribs two and twenty in number, side ribs depressly flattened, anterior of which are finely crenulated on the posterior side, middle ribs rounded, very closely crenated throughout, interstices between all the ribs transversely impressly cancellated; whitish, faintly tinged with brown towards the umbones.

BRODERIP and SOWERBY, Pro. Zool. Soc., 1833.

Hab. Xipixapi, West Columbia, (found in sandy mud at the depth of eleven fathoms); Cuming.

Of a very singular oblong form, with a peculiarity of sculpture, which I have not observed in any other species.

Species 118. (Mus. Cuming.)

(Figure slightly magnified.)

CARDIUM FASCIATUM. *Card. testâ subquadrato-ovatâ, posticè leviter angulatâ; radiatim costatâ, costis senis et viginti, posticis subtiliter muricatis, anticis obtuso-squamatis; albidâ, ferrugineo-fusco pallidè tinctâ et fasciatâ.*

THE BANDED COCKLE. Shell thin, somewhat squarely ovate, posteriorly slightly angulated; radiately ribbed, ribs six and twenty in number, the posterior finely muricated, the anterior obtusely scaled; whitish, faintly stained and banded with rusty brown.

MONTAGU, Test. Brit. Supp. p. 30. pl. 27. f. 6.

Hab. Britain (found on the western coast).

A thin pellucid shell, slightly gibbous on the posterior side.

Species 119. (Mus. Cuming.)

(Figure slightly magnified.)

CARDIUM OVALE. *Card. testâ tenui subquadrato-ovatâ, depressiusculâ, posticè leviter angulatâ; radiatim costatâ, costis, anticis præcipuè, obscurè subtilissimè muricatis; albidâ, fuscescente pallidè tinctâ et fasciatâ.*

THE OVAL COCKLE. Shell thin, somewhat squarely ovate, rather depressed, posteriorly slightly angulated; radiately ribbed, ribs, the anterior especially, obscurely very finely muricated; whitish, faintly stained and banded with brown.

SOWERBY, Cat. *Card.* Conch. Illus., no. 24.

Cardium elongatum, Montagu, (not of Bruguière).

Hab. Britain (Torbay).

More depressed than the preceding species.

Species 120. (Mus. Saul.)

(Figure slightly magnified.)

CARDIUM VIRGO. *Card. testâ subquadrato-cordatâ, posticè concavo-angulatâ; radiatim costatâ, costis octonis et triginta, angustis, compressis, creberrimè squamosis, medianis squamis erectioribus, costarum interstitiis transversim elevato-striatis; extus niveâ, intus sanguineâ.*

THE VIRGIN COCKLE. Shell somewhat squarely heart-shaped, posteriorly concavely angulated; radiately ribbed, ribs about thirty-eight in number, narrow, compressed, very closely scaled, middle ribs with the scales more erect, interstices between the ribs transversely elevately striated; pure snowy white without, blood-red within.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

Care should be taken not to mistake this very delicate and beautiful shell for a white variety of the *Cardium hystrix*, to which it is most nearly allied.

Species 121. (Mus. Cuming.)

CARDIUM EXIGUUM. *Card. testâ obliquè ovatâ, gibbosâ, latere antico brevissimo, postico angulato; radiatim costatâ, costis duabus et viginti, obsoletè tuberculatis, interstitiis punctatis; albidâ, ferrugineo-fusco pallidè tinctâ.*

THE LITTLE COCKLE. Shell obliquely ovate, gibbous, anterior side very short, posterior angulated; radiately ribbed, ribs two and twenty in number, obsoletely tuberculated, interstices between the ribs punctured; whitish, faintly tinged with rusty brown.

GMELIN, Systema Naturæ, p. 3255. no. 37.

Hab. Britain.

The tubercles are, in some specimens, almost obliterated.

Species 122. (Mus. Cuming.)

CARDIUM DIONÆUM. *Card. testâ lateraliter cordiformi, latere antico producto, postico planè concavo-depresso, medio valdè gibbosâ, carinatâ, carinâ spinoso-dentatâ; posticè radiatim sulcatâ, anticè radiatim planiliratâ, liris muricato-nodulosis; albâ, areâ posticâ maculis niveis opacis floccatâ.*

DIONE'S COCKLE. Shell laterally heart-shaped, anterior side produced, posterior very flatly concavely depressed, the middle very gibbous, keeled, keel spinosely dentated; posterior side radiately grooved, anterior radiately flatly ridged, ridges prickly noduled; white, posterior area flaked with opake snowy spots.

SOWERBY, Zoological Journal, vol. iv. p. 367.

Hab. Island of Annaa, Pacific Ocean (found among fine coral sand at low water); Cuming.

A delicate pretty species, allied to the *Cardium cardissa*, the anterior side of which is attenuately produced, whilst the posterior is peculiarly flattened.

Species 123. (Mus. Cuming.)

CARDIUM HIULCUM. *Card. testâ transversè oblongâ, latere antico brevi, postico elongato; radiatim costatâ, costis octonis et triginta, postremis anticisque muricatis; albâ, roseo hic illic pallidè maculatâ.*

THE UNCLOSED COCKLE. Shell transversely oblong, anterior side short, posterior elongated; radiately ribbed, ribs eight and thirty in number, the extreme posterior and anterior of which are muricated; white, faintly spotted here and there with pink.

REEVE, Pro. Zool. Soc., 1845.

Hab. ——?

This approaches the *Cardium bullatum* somewhat in form, but has fewer ribs and a different style of sculpture.

124

125

126

127

128

129

130

131

132

133

CARDIUM.

PLATE XXII.

(Figures moderately magnified.)

Species 124. (Mus. Cuming.)

CARDIUM RUBRUM. *Card. testâ globoso-cordatâ posticè leviter angulatâ; radiatim costatâ, costis convexis, hic illic muricatis; roseâ, subpellucidâ.*

THE RED COCKLE. Shell globosely cordate, posteriorly slightly angulated; radiately ribbed, ribs convex, here and there prickly; rose-colour, somewhat transparent.

MONTAGU, Testacea Britannica, p. 83.

Hab. Britain.

A small, transparent, rose-coloured shell, furnished here and there with a few prickles.

Species 125. (Mus. Cuming.)

CARDIUM MUNDUM. *Card. testâ trigono-cordatâ, gibbosâ, posticè plano-depressâ, radiatim planiliratâ, liris medianis anticisque minutè muricatis; albâ, areâ posticâ maculis albis opacis floccatâ.*

THE NEAT COCKLE. Shell triangularly cordate, gibbous, posteriorly flatly depressed, radiately flatly ridged, middle and anterior ridges minutely muricated; white, posterior area flaked with opake white spots.

REEVE, Pro. Zool. Soc., 1845.

Hab. Lord Hood's Island, Pacific Ocean (found among coral sand); Cuming.

A neat little species, allied in form to the *Cardium fragum*, of which several specimens were collected by Mr. Cuming at the above named island.

Species 126. (Mus. Cuming.)

CARDIUM OVULOIDES. *Card. testâ oblongo-ovatâ, valdè gibbosâ, radiatim costatâ, costis ad septenis, medianis anticisque grandibus, fortibus, noduloso-granatis, interstitiis transversim impresso-striatis, costis posticis angustis, lævibus planatis; intus extusque lutescente-albâ.*

THE LITTLE EGG-LIKE COCKLE. Shell oblong-ovate, very gibbous, radiately ribbed, ribs about seventeen in number, the middle and anterior large, strong, nodulously granulated, interstices transversely impressly striated, posterior ribs narrow, smooth, flattened; yellowish white within and without.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

This little species exhibits the form of the *Cardium obovale* with the sculpture of the *Cardium graniferum*.

Species 127. (Mus. Cuming.)

CARDIUM CARDITÆFORME. *Card. testâ transversè oblongâ, latere antico brevissimo; subtiliter radiatim costatâ; costis minutissimè crebrisquamatis, squamis posticis eminentioribus; albidâ, posticè aurantio-fuscescente tinctâ.*

THE CARDITA-SHAPED COCKLE. Shell transversely oblong, anterior side very short; finely radiately ribbed, ribs covered with very minute scales, the posterior of which are the more eminent; white, faintly tinged posteriorly with orange-brown.

REEVE, Pro. Zool. Soc., 1845.

Hab. —— ?

A small thin shell, partaking very much of the characters of *Cardita*, although it has the hinge of *Cardium*.

Species 128. (Mus. Cuming.)

CARDIUM NODOSUM. *Card. testâ orbiculari, depressiusculâ, posticè subangulatâ; radiatim costatâ, costis quinis senisve et viginti, conspicuè obtuso-nodosis; albidâ.*

THE NODOSE COCKLE. Shell orbicular, rather depressed, posteriorly slightly angulated; radiately ribbed, ribs five or six and twenty in number, conspicuously obtusely noduled; whitish.

MONTAGU, Testacea Britannica, p. 81.

Hab. Torbay, Britain; Turton.

Each rib is surmounted with a row of small blunt nodules.

Species 129. (Mus. Cuming.)

CARDIUM QUADRARIUM. *Card. testâ tenui, quadrato-ovatâ, posticè leviter concavo-angulatâ; radiatim costatâ, costis planulatis, echinato-squamatis, squamis areæ posticæ muticis, costarum interstitiis subprofundè incisis; albidâ, areâ posticâ concavâ ferrugineo-fuscescente.*

THE SQUARE COCKLE. Shell thin, squarely ovate, posteriorly slightly concavely angulated; radiately ribbed, ribs flattened, here and there prickly scaled, those of the posterior area smooth, interstices between the ribs rather deeply cut; whitish, the concave posterior area pale rusty brown.

REEVE, Pro. Zool. Soc., 1845.
Hab. —— ?

The chief peculiarities of this shell are its flattened ribs, the interstices between which are narrowly and deeply cut, and its posterior concavity.

Species 130. (Mus. Cuming.)

CARDIUM PINNULATUM. *Card. testâ ovatâ, subobliquâ, radiatim costatâ, costis senis et viginti, squamis brevibus obtusis numerosis irregulariter sculptis, costis posticis eminentioribus; albicante.*

THE FEATHERED COCKLE. Shell ovate, rather oblique, radiately ribbed, ribs six and twenty in number, irregularly sculptured with numerous short obtuse scales, posterior ribs the more conspicuous; whitish.

CONRAD, Journ. Acad. Nat. Sci. Phil., vol. vii.
Hab. —— ?

Although some doubt has been attached to the value of this species, the shell here represented, which has been handed to me for it on good authority, is certainly distinct from any of the small *Cardia* that I have had an opportunity of examining.

Species 131. (Mus. Taylor.)

CARDIUM BOREALE. *Card. testâ subtransversè ovatâ, radiatim subtiliter sulcatâ, sulcis medianis anticisque obsoletis; albidâ, lineis trigonis fuscescentibus exilissimè pictâ, epidermide tenui prope margines indutâ.*

THE NORTHERN COCKLE. Shell somewhat transversely ovate, radiately finely grooved, middle and anterior grooves obsolete; whitish, very faintly painted with pale brown triangular lines, covered near the margins with a thin epidermis.

REEVE, Pro. Zool. Soc., 1845.
Hab. Greenland.

The anterior portion of this little shell is comparatively smooth, whilst the posterior is distinctly grooved. I have not seen any other specimen.

Species 132. (Mus. Cuming.)

CARDIUM SUEDIENSE. *Card. testâ minutâ, orbiculari, tenui, fragili, radiatim costatâ, costis octonis et viginti, convexis, muricatis; albâ, epidermide tenui stramineâ indutâ.*

THE SWEDISH COCKLE. Shell minute, orbicular, thin, fragile, radiately ribbed, ribs eight and twenty in number, convex, prickly; white, covered with a thin straw-coloured epidermis.

REEVE, Pro. Zool. Soc., 1845.
Hab. West coast of Sweden.

This is the smallest species of *Cardium* I have met with; it is not much unlike the figure of an odd valve discovered by M. Philippi, at Palermo, and figured in his second volume of the Enum. Moll. Siciliæ, pl. 14. f. 18, under the name of *C. minimum*; his description, however, by no means agrees with the northern species under consideration.

Species 133. (Mus. Cuming.)

CARDIUM ARCUATUM. *Card. testâ ovatâ, tenui, subpellucidâ, radiatim costatâ, costis plano-convexis, squamis obtusis arcuatis irregulariter sculptis; albidâ.*

THE ARCHED COCKLE. Shell ovate, thin, somewhat transparent, radiately ribbed, ribs flatly convex, irregularly sculptured with obtuse arched scales; whitish.

MONTAGU, Testacea Britannica, p. 85. pl. 3. f. 2.
Hab. Falmouth Harbour, Britain.

A very thin, fragile shell, in which the scales are unusually numerous and obtuse, having almost the appearance of raised striæ.

NOTE.—Since the publication of the CARDIUM RUSTICUM in October last, my views in regard to that species (according to the example of Poli, but in opposition to that of Chemnitz, Lamarck, Sowerby and others) have been singularly confirmed by an incident to which I attach considerable importance. Upon looking over the shells formerly belonging to Linnæus, in the Museum of the Linnæan Society of London, I have had the pleasure of finding the very shell from which the great Professor of Upsal probably described the species in question; it has, at all events, the figures "91." very legibly written upon the inside of one of the valves, in his own handwriting, referring to the CARDIUM RUSTICUM of the 'Systema Naturæ,' 12th edition.

M. Deshayes will no doubt be pleased to hear that an odd valve of the CARDIUM SERRATUM also, such as I have published it, is still preserved in the same collection, marked "86" in Linnæus' handwriting, referring in like manner to the 12th edition of the 'Syst. Nat.'—L. R.

CARDIUM.

	Plate.	Species.
aculeatum, *Linnæus*	VII.	17
Æolicum, Born	II.	14
alternatum, *Sowerby*	XIII.	65
angulatum, *Lamarck*	XIV.	70
apertum, Chemnitz	XII.	63
Arcticum, Sowerby	XI.	54
arenatum, *Montagu*	XXII.	133
arenicolum, *Reeve*	XVI.	78
Asiaticum, *Bruguière*	XVIII.	90
aspersum, Sowerby	II.	8
assimile, *Reeve*	IX.	45
attenuatum, *Sowerby*	XV.	72
auricula, *Forskäel*	VII.	39
australe, *Sowerby*	XIX.	97
Australiense, *Reeve*	V.	24
Belcheri, *Broderip*	I.	5
Belticum, *Beck*	XX.	113
biangulatum, *Sowerby*	VI.	29
biradiatum, *Bruguière*	X.	49
boreale, *Reeve*	XXII.	131
Brasilianum, *Lamarck*	XII.	61
bullatum, *Lamarck*	II.	8
Burdigalinum, Lamarck	V.	27
cardissa, *Linnæus*	III.	15
Carditæformis, *Reeve*	XXII.	127
Caspium, *Reeve*	XIX.	96
ciliare, *Linnæus*	VII.	35
citrinum, Wood	I.	1
consors, *Sowerby*	XVII.	86
costatum, *Linnæus*	II.	11
crenulatum, *Lamarck*	XX.	112
Cumingii, *Broderip*	XII.	59
Deshayesii, *Payrandeau*	XVII.	83
Dionæum, *Sowerby*	XXI.	122
Donaciforme, *Schroeter*	V.	25
Dupuchense, *Reeve*	XIV.	67
echinatum, *Linnæus*	VI.	34
edentulum, Sowerby	X.	53
edule, *Linnæus*	IV.	22
Eichwaldii, *Reeve*	XIX.	94
elatum, *Sowerby*	VIII.	41
Elenense, *Sowerby*	XX.	104
elongatum, *Bruguière*	IX.	46
elongatum, Montagu	XXI.	119
enode, *Sowerby*	XV.	73
erinaceum, *Lamarck*	XII.	62
exiguum, *Gmelin*	XXI.	121
fasciatum, *Montagu*	XXI.	118
ferruginosum, *Reeve*	XX.	106
fimbriatum, *Wood*	XVIII.	91
flavum, Born	XVI.	79
fornicatum, *Sowerby*	XX.	110
foveolatum, *Sowerby*	XVIII.	87
fragile, *Reeve*	XX.	108
fragum, *Linnæus*	IV.	23
glaucum, Bruguière	IV.	22
Grœnlandicum, *Chemnitz*	X.	48
graniferum, *Broderip*	VIII.	43
hemicardium, *Linnæus*	VII.	38
hians, *Brocchi*	V.	27
hiulcum, *Reeve*	XXI.	123
humanum, Chemnitz	III.	15
hystrix, *Reeve*	VIII.	40
Icelandicum, *Chemnitz*	XI.	54
imbricatum, *Sowerby*	V.	28
imbricatum, Born	IV.	23
impolitum, *Sowerby*	XVI.	80
incarnatum, *Reeve*	I.	2
Indicum, Lamarck	V.	27
inversum, Lamarck	III.	15
isocardia, *Linnæus*	XVII.	84
Junoniæ, Lamarck	III.	15
lacunosum, *Reeve*	XVI.	81
lævigatum, *Linnæus*	XIV.	69
lævigatum, Pennant	IX.	48
lævigatum, Gmelin	I.	1
lævigatum, Chemnitz	X.	49
Lamarckii, *Reeve*	XVIII.	93
laticostatum, Sowerby	X.	51
latum, *Born*	IV.	21
leucostoma, *Born*	XIII.	47
lineatum, Gmelin	V.	26
lima, *Reeve*	XV.	74
lyratum, *Sowerby*	II.	12
maculatum, *Sowerby*	XI.	58
maculatum, Gmelin	IV.	20
maculosum, *Wood*	XVI.	76
maculosum, Sowerby	XVI.	78
magnum, *Born*	IV.	20
magnum, Chemnitz	XIV.	68

	Plate.	Species
marmoreum, Lamarck	XIII.	47
medium, *Linnæus*	VI.	30
Mindanense, *Reeve*	IV.	19
monstrosum, Chemnitz	III.	15
Mortoni, *Conrad*	XIX.	101
mucronatum, Poli	VI.	34
multipunctatum, *Sowerby*	I.	7
multispinosum, *Sowerby*	II.	10
multistriatum, Sowerby	XVI.	76
mundum, *Reeve*	XXII.	125
muricatum, *Linnæus*	VI.	33
muticum, *Reeve*	VI.	32
nebulosum, *Reeve*	XIX.	99
nivale, *Reeve*	XIX.	95
nodosum, *Montagu*	XXII.	128
Nuttallii, *Conrad*	XIII.	66
oblongum, *Linnæus*	XV.	71
obovale, *Sowerby*	XXI.	117
orbita, *Sowerby*	XVII.	85
ovale, *Sowerby*	XXI.	119
oviputamen, *Reeve*	VII.	36
ovuloides, *Reeve*	XXII.	126
oxygonum, *Sowerby*	XVI.	77
pallidum, *Reeve*	XVIII.	92
papillosum, *Poli*	XX.	111
paucicostatum, *Sowerby*	IV.	18
Panamense, *Sowerby*	XI.	56
papyraceum, *Chemnitz*	II.	9
pectinatum, *Linnæus*	II.	14
Pennantii, *Beck*	IX.	48
pinnulatum, *Conrad*	XXII.	130
planicostatum, *Sowerby*	VI.	31
Polii, Payraudeau	XX.	111
procerum, *Sowerby*	X.	51
pseudo-fossile, *Reeve*	X.	52
pseudo-lima, *Lamarck*	I.	4
pubescens, Courthouy	IX.	54
pulchellum, *Reeve*	VIII.	42
pulchrum, *Reeve*	XIX.	98
pulicarium, *Reeve*	XIX.	102
quadrarium, *Reeve*	XXII.	129
radiatum, *Reeve*	XVIII.	89
retusum, *Linnæus*	XIX.	103
rigidum, *Wood*	XX.	105
ringens, *Chemnitz*	I.	6
ringiculum, *Sowerby*	XXI.	115
roseum, Chemnitz	III.	15
rubicundum, *Reeve*	IX.	44
rubrum, *Montagu*	XXII.	124
rugatum, *Gronovius*	XII.	63
rugosum, *Lamarck*	XIV.	68
rusticum, *Linnæus*	III.	16
rusticum, Lamarck	XVIII.	93
rusticum, Eichwald	XIX.	94
senticosum, *Sowerby*	XVI.	82
serratum, *Linnæus*	I.	1
serratum, Bruguière	XVI.	79
Sinense, *Sowerby*	I.	3
stellatum, *Reeve*	XX.	109
striatulum, *Sowerby*	XII.	60
subelongatum, *Sowerby*	XI.	57
subretusum, *Sowerby*	XIX.	100
subrugosum, *Sowerby*	XI.	55
Suediense, *Reeve*	XXII.	132
sulcatum, *Gmelin*	XVI.	79
tenuicostatum, *Lamarck*	X.	50
trigonoides, *Pallas*	V.	26
tuberculatum, Chemnitz	III.	16
tumoriferum, *Lamarck*	XII.	64
unedo, *Linnæus*	II.	13
unicolor, *Sowerby*	XVIII.	88
unimaculatum, *Sowerby*	XXI.	114
variegatum, *Sowerby*	XV.	75
ventricosum, Bruguière	IV.	20
virgineum, Gmelin	XII.	65
virgo, *Reeve*	XXI.	120
vitellinum, *Reeve*	VII.	31

ERRATA.

Species 10. CARDIUM MULTISPINOSUM,—insert SOWERBY, Pro. Zool. Soc., 1840; Conch. Illus. f. 38 *a*, *b*.

Species 16. CARDIUM RUSTICUM,—Add as synonyme, *Cardium tuberculatum*, Chemnitz, Sowerby, (not of Linnæus); the *Cardium tuberculatum* of Linnæus being an obscure specimen of the *Cardium echinatum*.

Species 23. CARDIUM FRAGUM,—Add as synonyme, *Cardium imbricatum*, Born.

Species 34. CARDIUM ECHINATUM,—Add as synonyme, *Cardium mucronatum*, Poli.

Species 82—*for* CARDIUM RASTRUM, *Reeve*; *read* CARDIUM SENTICOSUM, *Sowerby*, Pro. Zool. Soc., 1841; Conch. Illus. f. 10. *Hab.* St. Elena, West Columbia; Cuming.

MONOGRAPH

OF THE GENUS

ISOCARDIA.

"For wonderful indeed are all his works,
Pleasant to know, and worthiest to be all
Had in remembrance, always with delight."—*Milton.*

1

2a

2b

3a

4

3b

5

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

Sowerby del sculp et lith.

Reeve Brothers cupro-lith.

ISOCARDIA.

PLATE I.

Genus ISOCARDIA, Lamarck.

Testa æquivalvis, cordata, ventricosa, concentricè lirata et striata, umbonibus distantibus, divaricatim symmetricè involutis; valdè inæquilateralis, latere antico brevissimo. Cardo: dentibus cardinalibus duobus, compressis, intrantibus, uno sub umbone recurvo, dente laterali unico elongato, postico, infra ligamentum. Ligamentum externum, angustum, subelongatum, hinc umbones versus bifurcatum.

Shell equivalve, heart shaped, ventricose, concentrically ridged and striated, with the umbones distant and divaricately, most symmetrically involuted; very inequilateral, anterior side very short. Hinge: two compressed cardinal teeth interlocking, one of which is recurved under the umbone, one elongated lateral tooth on the posterior side beneath the ligament. Ligament external, narrow, rather elongated, thence biforked towards the umbones.

The genus *Isocardia* though limited in species is especially distinguished by the very novel and beautiful structure of the umbones; which, instead of terminating in immediate approximation to each other, as in the genus *Cardium* and others, divaricate off in an opposite direction and become most symmetrically involuted. The bifurcate extension of the ligament is also peculiar.

Linnæus included the only species of *Isocardia* with which he was acquainted, the *Isocardia cor*, in his genus *Chama*; and Bruguière referred it, in company with another species, supposed to be the *Chama Moltkiana* of Chemnitz, to a place among the *Carditæ*. Lamarck, very properly elevated them to the rank of a new genus, to which several fossil species were added, and his generic name has been universally adopted; although, according to the strict rules of nomenclature, it is a matter of some question whether it ought to be maintained.

The *Isocardia cor* and its anatomy were, in fact, described some years before by Poli in his beautiful work the 'Testacea utriusque Siciliæ'; the mollusk under the title of *Glossus*, and its shell under that of *Glossoderma*.

Only five species of *Isocardia* are at present known; two of similar character, one British or Irish, the other Mediterranean, distinguished from each other by their transverse or globose form with a variation in the incurvature of the umbones, and three of like affinity from the Eastern world, the specific peculiarities of which are determined by variations of form, and by the varied development of the concentric ridges.

Species 1. (Mus. Cuming.)

ISOCARDIA MOLTKIANA. *Isoc. testâ subquadrato-ovatâ, gibbosâ, latere antico brevissimo, postico obliquè carinato; fortiter concentricè plicato-costatâ, costis carinam super conspicuis, quasi obtuso-tuberculatis, areâ postremâ medio subproductâ, lævigatâ aut subtilissimè striatâ; lutescente-albâ.*

MOLTKIAN'S ISOCARDIA. Shell somewhat squarely ovate, gibbous, anterior side very short, posterior obliquely keeled; strongly concentrically plicately ribbed, ribs conspicuous upon the keel, as if obtusely tuberculated, extreme posterior area rather produced in the middle, smooth or very finely striated; yellowish white.

Chama Moltkiana, Chemnitz, Conchyl. Cab., vol. vii. pl. 48. f. 485–7.

Hab. Sorsogon, Province of Albay, Island of Luzon, Philippines (dredged from among coarse sand and gravel, at the depth of six fathoms); Cuming.

I have to congratulate Mr. Cuming upon the discovery of a valve and a true pair of this comparatively lost species, because it enables me to correct a very important error in the history of this genus.

By referring to the figures, above quoted, of the *Chama Moltkiana*, they will be found to agree with this, and not the well-known species hitherto published under that name. The *Isocardia Moltkiana* is a short gibbous squarish shell, very strongly plicately ribbed, and the ribs are developed with so much force upon the keel as to assume almost the appearance of tubercles. The species which has hitherto supplanted it, and which I now propose to distinguish by the new title of *Isocardia vulgaris*, is of a more oblong form, very finely plicately ridged, and the ridges become perfectly obsolete on approaching the keel; all of which differences I consider of specific importance.

Species 2. (Figs *a* and *b*, Mus. Cuming.)

ISOCARDIA VULGARIS. *Isoc. testâ oblongo-ovatâ, subtrigonâ, obliquâ, latere antico brevi, postico elongato, obtuso-carinato; irregulariter concentricè plicato-liratâ,*

liris creberrimis, carinam super evanidis, carinâ areâque postremâ subtilissimè striatis; lutescente-albâ.

THE COMMON ISOCARDIA. Shell oblong-ovate, somewhat triangular, oblique, anterior side short, posterior elongated, obtusely keeled; irregularly concentrically plicately ridged, ridges very close, obsolete upon the keel, keel and the extreme posterior area very finely striated; yellowish white.

Cardita Moltkiana, Bruguière.

Isocardia Moltkiana, Lamarck.

Hab. China.

Having identified the preceding species with the *Chama Moltkiana* of Chemnitz, I have distinguished the present by a name which indicates the abundant importation of this once rare and highly prized shell.

Species 3. (Fig. *a* and *b*, Mus. Cuming.)

ISOCARDIA COR. *Isoc. testâ globoso-cordatâ, gibbosissimâ, lævigatâ aut concentricè striatâ; albidâ, lineis palidè fulvo-rufescentibus, trigono-undatis copiosissimè tinctâ, epidermide castaneo-fuscâ, umbones versus detritâ, indutâ; umbonibus interdum subcærulescentibus.*

THE HEART ISOCARDIA. Shell globosely cordate, very gibbous, smooth or concentrically striated; whitish, abundantly stained with pale fulvous red triangularly disposed zigzag lines, covered with a chesnut-brown epidermis, worn away towards the umbones; umbones sometimes tinged with blue.

LAMARCK, Anim. sans vert. (Deshayes' edit.), vol. vi. p. 445.

Chama cor, Linnæus.

Glossoderma cor, Poli.

Cardita cor, Bruguière.

Hab. Coast of Sicily, Mediterranean.

This well-known species is more particularly characterised by the fullness of the umbones, and by its globose and very symmetrical structure.

Species 4. (Mus. Cuming.)

ISOCARDIA HIBERNICA. *Isoc. testâ transversè cordatâ, gibbosâ, lævigatâ aut concentricè striatâ, umbonibus parvis, subattenuato-contractis; albidâ, fulvo-rufescente tinctâ, epidermide fuscâ vel olivaceo-fuscâ, umbones versus detritâ, indutâ.*

THE IRISH ISOCARDIA. Shell transversely cordate, gibbous, smooth or concentrically striated, umbones small, rather attenuately contracted; whitish, stained with fulvous red, covered with a brown or olive-brown epidermis, worn away towards the umbones.

Isocardia cor (*pars*), auctorum.

Hab. Irish Sea; Falmouth, Britain (dredged at depths of from ten to forty fathoms); Cuming.

I am quite satisfied that the two shells, the one Mediterranean, the other British or Irish, which have been described hitherto under the common title of *Isocardia cor*, are distinct species. The former besides exhibiting the usual indications of a warmer climate is of a full globose form, whilst the latter though of equally large if not larger size, is of a transverse somewhat compressed form, with the umbones much less involuted. These are not differences of more local variation, but of specific consequence, and are presented in all stages of growth; indeed, they are more conspicuous in young than in adult specimens.

The propriety of this arrangement is singularly confirmed by an observation in the second volume of the Zoological Journal, made by the Rev. J. Bulwer, in reference to the soft parts of these shells. After describing the habits and anatomy of some examples of the Irish species, which the reverend gentleman had preserved for some time alive in a vessel of sea-water, he says, "Since committing the above observations to paper I have seen the costly and elaborate work of Poli, containing, among other investigations, an account and anatomical drawings of the animal of the Isocardia cor of the Mediterranean. *On inspecting these a considerable difference between the animals of the foreign and Irish species is observable.*"

Species 5. (Mus. Cuming.)

ISOCARDIA LAMARCKII. *Isoc. testâ oblongo-ovatâ, obliquâ, latere antico brevissimo, postico subacuminato-elongato, carinato; irregulariter concentricè plicato-lirată, liris carinam super terminantibus, areâ posticâ subtilissimè striatâ; lutescente-albâ, posticè roseo maculatâ.*

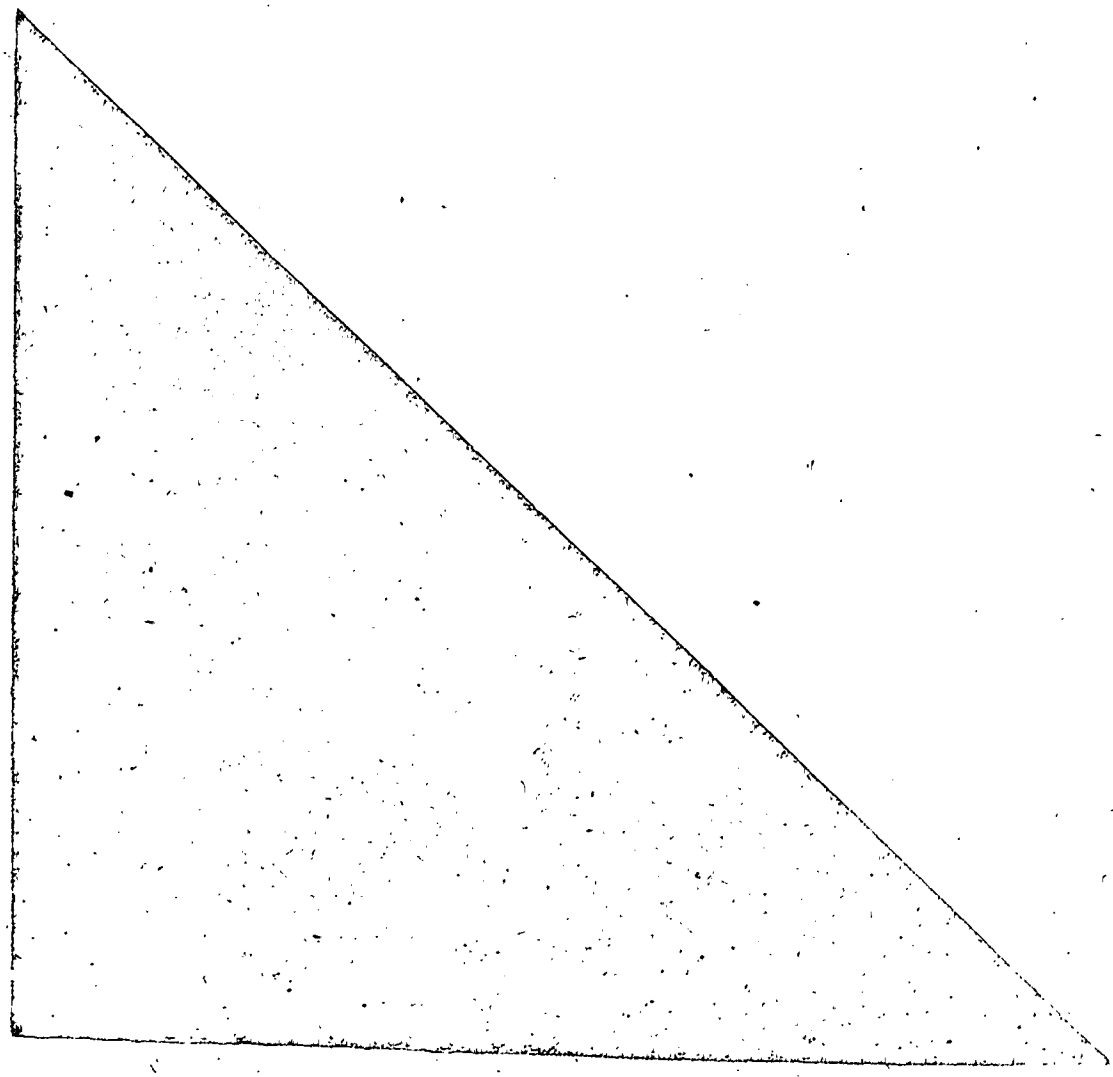
LAMARCK'S ISOCARDIA. Shell oblong-ovate, oblique, anterior side very short, posterior somewhat acuminately elongated, keeled; irregularly concentrically plicately ridged, ridges terminating upon the keel, posterior area very finely striated; yellowish white, posteriorly spotted with rose.

Isocardia Moltkiana? Encyclopédie Méthodique.

Hab. China.

Distinguished from the *Isocardia vulgaris* by its more elongated form, by the concentric ridges terminating on the keel, and by its delicate rose-spotted painting.

00087961



Digitized with financial assistance from the
Government of Maharashtra
on 12 March, 2016